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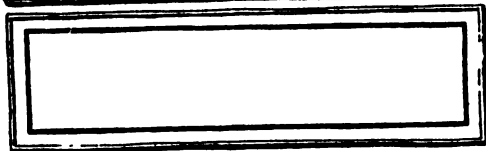
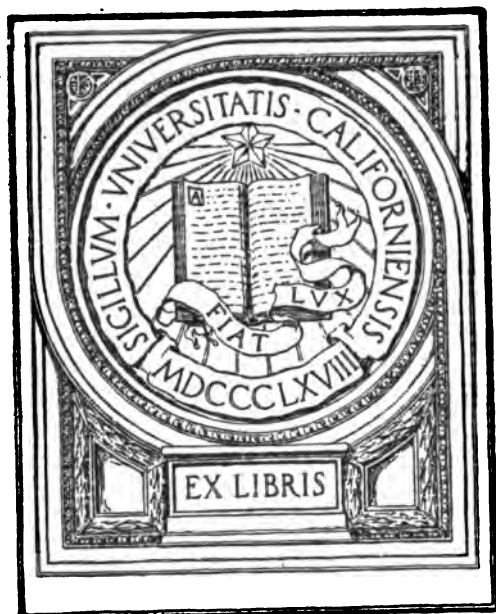
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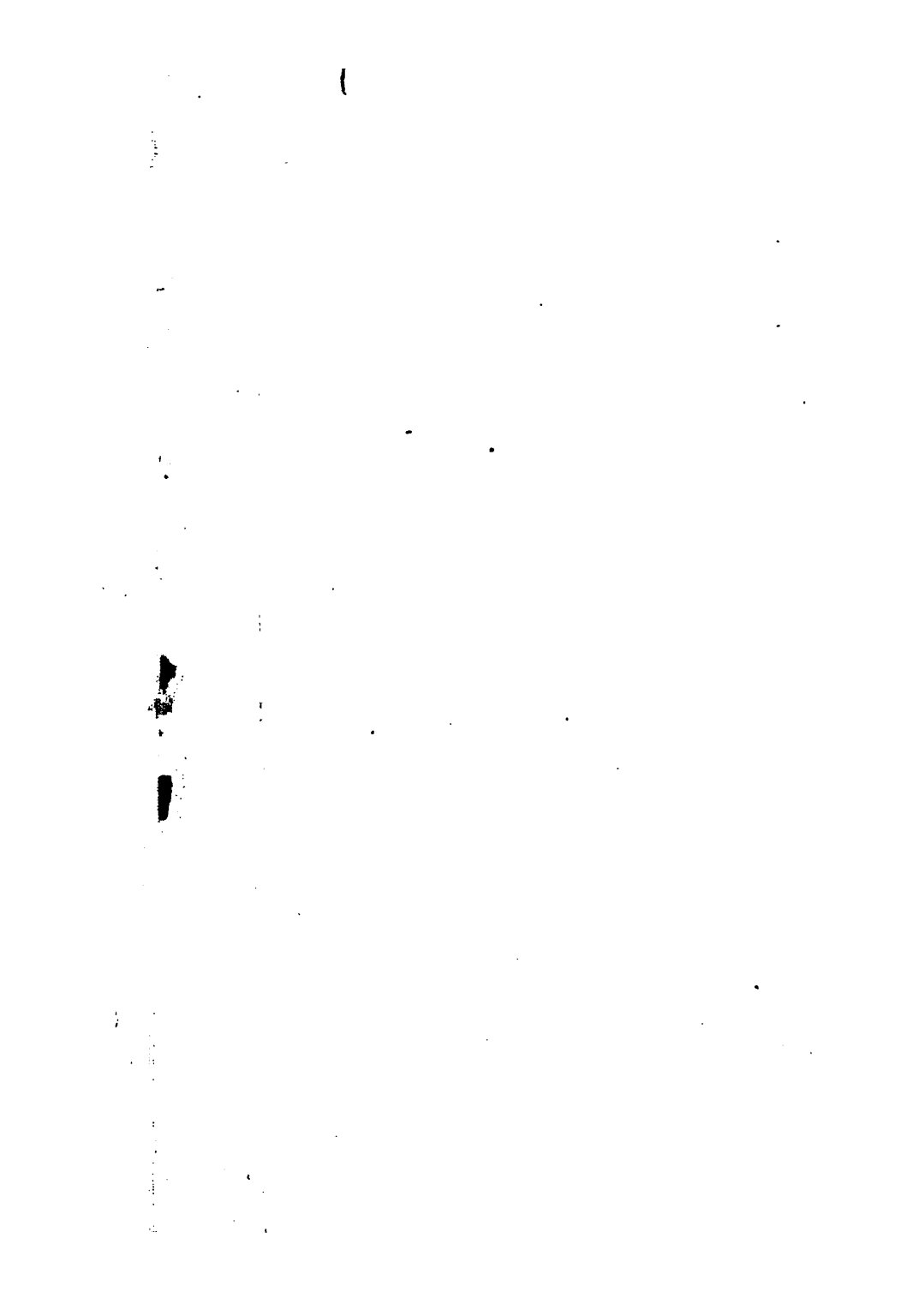
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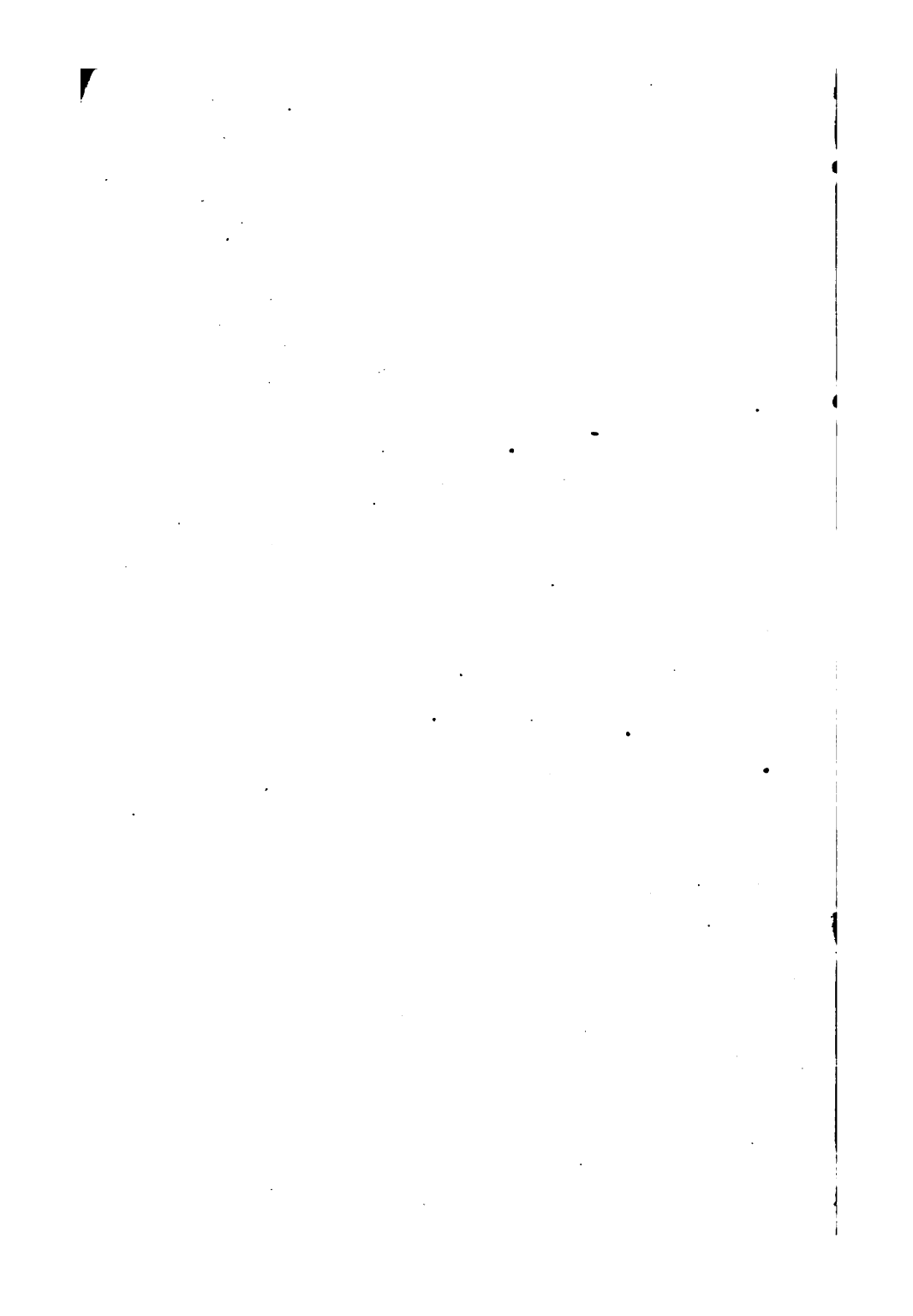
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Business Barometers

used in the

Accumulation of Money

*A Text Book on Applied Economics
for Merchants, Bankers
and Investors*

By

Roger W. Babson

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(FOURTEENTH EDITION)

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Professor of Civil Engineering
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"People will endeavor to forecast the future and make agreements according to their prophecy. Speculation of this kind by competent men is self-adjustment of society to the probability."—*Judge Holmes in a United States Supreme Court decision.*

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"I hold that a man who is long headed, who foresees and judges accurately, has an advantage over his neighbor, and it is not accounted immoral for him to use that advantage, because he is individually better fitted for the business; and it inheres in him by a law of nature, that he has a right to the whole of himself legitimately applied. If one man, or twenty men, looking at the state of the nation here, at the crops, at the possible contingencies and risks of climate, at the conditions of Europe; in other words, taking all the elements that belong to the world, into consideration, are sagacious enough to prophesy the best of action, I don't see why it is not legitimate."

HENRY WARD BEECHER.

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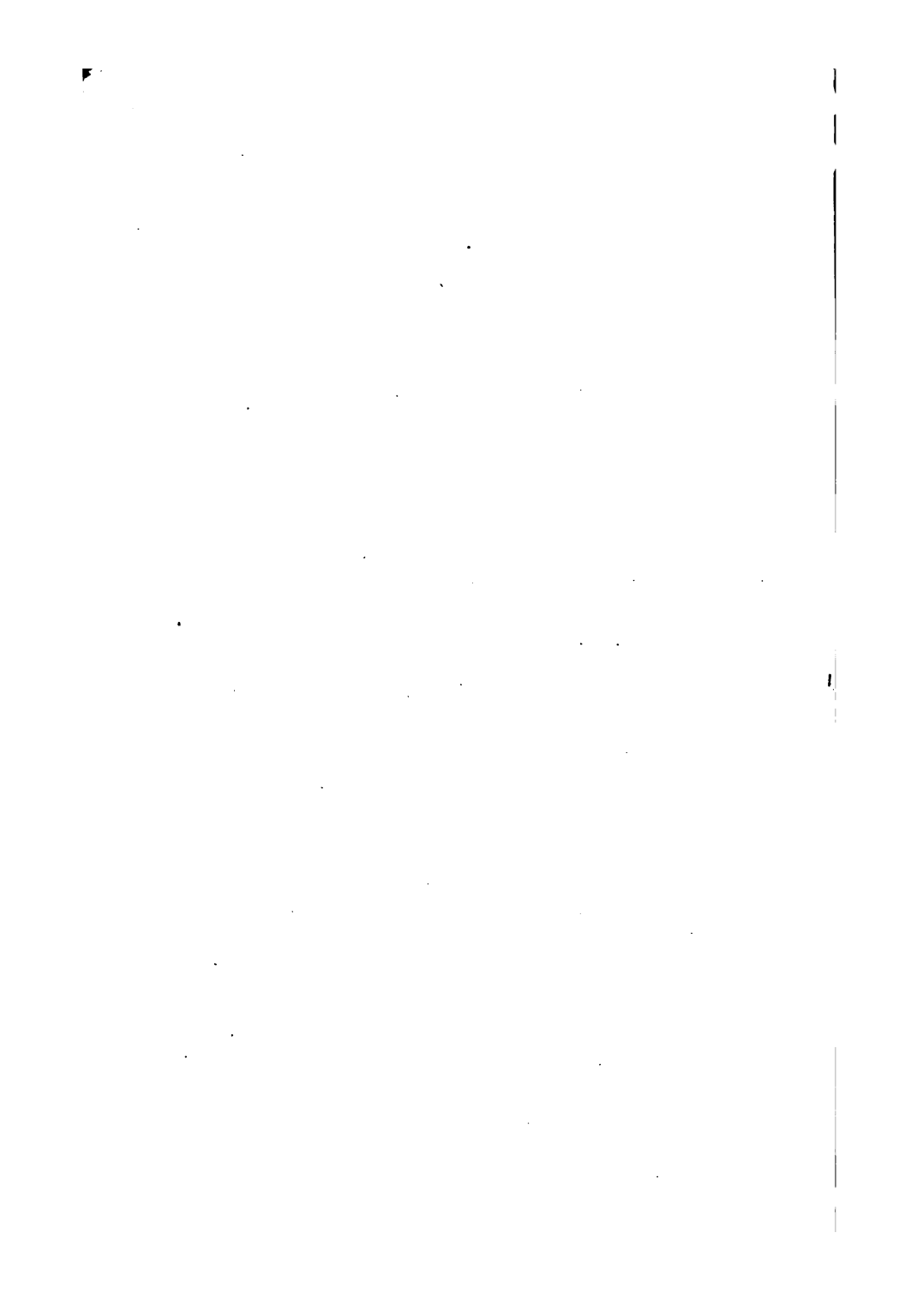
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FOREWORD

"A study of past disturbances leads to the conviction that no severe depression has occurred which was not preceded by loud warnings. These warnings ought not to pass unheeded, and in order to recognize them promptly it is necessary that accurate statistics be furnished. Much improvement has been accomplished in the last few years, though it is to be regretted that so much of our statistical information is fragmentary or inaccurate. Official and private publications furnish much valuable information. They include voluminous figures of deposits and loans of banks, movement of specie, exports and imports, railway earnings, wholesale prices, and the condition and probable yield of crops. A vital defect in many of them is the omission to give, for purposes of comparison, similar figures for previous months and years. Another defect is the absence of uniformity in the methods and classification employed. These comparative statistics would afford a means of determining the trend of events, and give warning when prices are unnaturally high or any branch of business is overdone. It is also noteworthy that we do not sufficiently consider statistics relating to the course of affairs in foreign countries, the influence of which upon our own condition is of the utmost importance, by reason of the enlargement of our trade and the closer international relations of modern commerce. Other statistics, which are inadequate or lacking and which would be of great value, are those pertaining to the employment

of labor, capital invested in new enterprises, amounts expended in new construction, volume of production in the various kinds of manufactures, and statistics of state banks and savings institutions similar to those pertaining to national banks. After making due allowance for the insufficiency of statistics, it must be said that the failure to pay sufficient attention to those already available is equally to be regretted."

The above was written in 1902 by Hon. Theodore E. Burton, U. S. Senator from Ohio, and is very interesting as a matter of prophecy. The "vital defects" mentioned have, however, now been overcome, and the office of the author of this book has obtained and is now able to furnish regularly the identical figures which Senator Burton then so much desired.



PREFACE

(Fundamental Principles which readers of this book should
always keep in mind.)

NEITHER this book nor any other can aid a banker, merchant, or investor to become rich *within a short time*. Nobody knows nor *can know* what conditions or prices are to exist within a few weeks, or even months, and 95% of the men who endeavor to take advantage of these monthly movements—or even who worry about them—never make much headway.

Great fortunes which have been created by bankers, merchants, and investors are the result of ignoring these monthly fluctuations in commodity and security prices, and of striving to anticipate and profit by the major movements coming every few years. *These major movements can be foretold* if one will spend the necessary time and money in studying fundamental conditions. *Therefore a fortune is within the grasp of every reader of this book who has and uses the necessary figures.* There are, however, two requisites:

1. One must develop self-control, both to refrain from attempting to profit by the monthly fluctuations, which 95% of the people endeavor to follow, and to act quickly and take advantage of the major movements, which 95% of the people fail to profit by, either because they are infatuated with prosperity or scared by panic or depression.
2. One must develop patience, and remember that it takes years to build up a fortune in this

way, that it is an especially slow process at first, so that what we spend for obtaining the data the first few years may seem large during these early years. The expense, however, is infinitesimal compared with the value. In truth, it is due to the fact that most people ignore these figures, that 90% of our business men are said to "fail."

Some ask: "Are not students of fundamental conditions working to their own disadvantage in urging others to unite in this work?" My answer is "*Theoretically—yes.*" On the other hand, every honest preacher, physician, lawyer, teacher, judge, and soldier who is truly serving his function in the community must strive to eliminate the trouble, upon the existence of which he is dependent for a livelihood. But, until the world no longer needs preachers, physicians, lawyers, judges, and soldiers, there will be periods of prosperity and depression when commodities and securities will rise and decline in price. *We who study fundamental conditions and act in accordance with what they teach,* will both perform a distinct service to our country and slowly but surely create for our institutions and ourselves huge fortunes.

The writer of this book wishes to acknowledge the aid which he has received from many friends in this country and abroad. He wishes also to thank his efficient corps of assistants who have aided greatly in the compilation, and commends the various books, papers, and periodicals which he has quoted from or used in other ways.

He also wishes again to thank his many friends in the various stock exchange firms, bond houses, and banks who have been patient during the ex-

perimental and formulative stages of this work. These friends have not only recognized the difficulties under which the work has been performed, but have always aided greatly by criticisms and suggestions. May the writer never abuse this friendship!

R. W. B.

WELLESLEY HILLS, MASS., July, 1920.



CHAPTER I

TWO CLASSES OF STATISTICS

STATISTICS are divided into two classes, viz.: Comparative Statistics and Fundamental Statistics; and the following gives a short description of these two classes:

(1) Comparative Statistics

So far as the merchant is concerned, comparative statistics relate to the weight, quality, age, and method of manufacture of the merchandise in which he deals, together with such "trade figures" as are published in the trade journals.

From the investor's point of view, comparative statistics include all particulars concerning the bonded debt, the earnings, and the general physical and financial condition of properties. Such statistics are very necessary to bankers and investors for comparing similar securities of different companies, or different securities of the same company. If such data are always up to date, such comparative statistics are very valuable for enabling one to select safe securities, either for permanent investment or for buying and selling again. As the largest and most successful stock exchange brokers, bond houses, and mercantile firms are already well supplied with comparative statistics, and, so far as they are useful, are obtaining excellent results from them,

we shall not here discuss details concerning this class. It should be clearly understood, however, that such statistics are worthless for determining the *general course* of the entire market.

Comparative statistics determine only actual values, enabling one to select safe securities or good merchandise, or to select the better of two or more companies' securities or grades of merchandise. With the general market conditions remaining fixed, comparative statistics might be used for forecasting a rise or a decline; but the general market is so seldom stable, that comparative statistics cannot be depended upon to serve this purpose. It is this fact, that they are inadequate for analyzing general conditions, that has brought comparative statistics into ill repute. The *market* value of securities or merchandise may continually decline, and the *intrinsic* value of the same increase, or vice versa.

Whoever bases either purchases or sales upon earnings, physical conditions, or other comparative statistics alone *with the idea of selling at a profit*, usually loses money. Note the phrase, "With the idea of selling at a profit." Such statistics may be used for selecting a *safe* investment or *good* merchandise, such as one may desire to hold permanently or for a very long while; but they are absolutely worthless for the "turns." It is because this fact is not being recognized by many firms, content with accumulating only comparative statistics, that even with their elaborate statistical departments they are often on the losing side. In

short, comparative statistics treat only of surface conditions.

(2) Fundamental Statistics

Fundamental statistics relate to *underlying* conditions of the country and make it possible to forecast demand, supply, money conditions, etc. Fundamental statistics, although now used by only the most careful investors and merchants, are by far the most necessary and profitable.

It is the purpose of this book to show the importance of considering underlying and fundamental conditions before buying or selling securities or merchandise.

All financial history has consisted of distinct cycles, and, although of different durations, each cycle has consisted of four periods, namely:

1. A Period of Prosperity
2. A Period of Decline
3. A Period of Depression
4. A Period of Improvement

Moreover, the laws of nature, commerce, and industry determine that these cycles shall always consist of four different periods. The idea that reckless prosperity can ever become permanent and will not be followed by a business depression is false. The idea that there can be an unlimited period of depression without succeeding general activity and high market prices, is likewise a mistaken notion. There must be a reaction to both abnormal conditions.

It, however, should be remembered that there

are *major* cycles of about twenty years' duration, and also minor cycles of about five years' duration.

Theoretically, there should be a state where everybody is prosperous and nobody overtrades, where the cost of living is reasonable, and the wage-earner has a margin to save for old age or establish a higher standard of comfort. Yet it is true that we have never so far seen a condition so equable.

The record of crises and booms can be carried back beyond the history of this country. We can start from the opening years of the eighteenth century, when William of Orange was on the English throne. We can trace therefrom a commercial cycle once in five to twenty years, and we can carry it into the last century with conditions exactly reflected on this side of the Atlantic. A condition of equilibrium is apparently the most difficult of all for the world's trade to maintain.

"Business may be quietly good, but that ambition to which we probably owe also the greater part of the world's progress insists upon forcing it beyond reasonable capacity. The result is always the same. The result of years of saving is overconfidence, inflation, waste, conversion of floating wealth into fixed wealth, and, finally, collapse and panic. Here is the plain evidence of two hundred years, and it may be assumed at no risk that it is the evidence of all commercial systems. Joseph with his seven fat years and his seven lean years expressed nothing more.

"What is not so readily realized is that a panic is followed by rapid recovery in stock prices, and

one slower but still relatively quick in general business. This again is followed by an arrest in business, where, contrary to assumptions just as hasty and ill balanced as those which caused the bear attitude on the panic break, boom conditions are not immediately restored, nor does anything of the kind develop within a year or so after the crisis. The first recovery runs too far and has always run too far. What follows is, not collapse, but dullness. It becomes imperative to make real savings in order to build up for the next boom in business."

A list of about twenty-five subjects about which merchants and investors systematically collect, analyze, and index statistics, is given on the following page, and for convenience they are combined under twelve headings, which headings are herewith described in detail. Later in Chapters VI, VII, and VIII many of these twenty-five subjects are described in detail. These are the subjects studied by the oldest, richest, and most conservative financial and mercantile houses of the world for determining which of the above-mentioned periods the country is experiencing or is about to enter *at any given time*. The use of fundamental statistics eliminates much guessing and uncertainty concerning mercantile or stock market movements.

The only requirement is to collect, tabulate, and study the weekly and monthly figures as they are received. These plainly show whether the general tendency of any market is upward or downward, and whether it is the time to buy or sell, or to do neither.

As above stated, these fundamental statistics are even more important than comparative statistics. Not only are the latter of little value, unless supplemented by these fundamental statistics, but experience has shown that such investors as have confined their operations to standard securities, and such merchants as have bought standard goods, have made fortunes for themselves and their customers by a study of these fundamental statistics exclusively.

The twelve headings and the subjects included as above mentioned are as follows:

I. *Building and Real Estate*: Including all New Building and Fire Losses.

II. *Bank Clearings*: Total Bank Clearings; Bank Clearings excluding New York.

III. *Business Failures*: Failures, by number, amount, and percentage.

IV. *Labor Conditions*: Immigration and Emigration Figures.

V. *Money Conditions*: Money in Circulation; Comptroller's Reports; Loans of the Banks; Cash held by the Banks; Deposits of Banks; Surplus Reserve of Banks.

VI. *Foreign Trade*: Imports; Exports; Balance of Trade.

VII. *Gold Movements*: Gold Exports and Imports; Domestic and Foreign Exchange, and Money Rates.

VIII. *Commodity Prices*: Foreign and Domestic Commodity Prices; Production of Gold.

IX. *Investment Market*: Stock Exchange Trans-

actions and Security Prices; New Securities; New Corporations formed.

X. *Condition of Crops*: Crop Conditions and other Commodity Production.

XI. *Railroad Earnings*: Gross and Net Earnings.

XII. *Social Conditions*: Labor Troubles and Political Factors.

These twelve divisions have by custom come to be known among merchants as the Twelve Barometers of Trade and may be briefly described as follows:

I. The number of miles of *new railroad constructed*, and especially figures on *Building Statistics*, give a clew to what new construction work is going on throughout the country. The exactness with which business conditions could have been foretold in the past by such figures is truly marvelous. It may also be stated that iron is one of the first commodities to fall in price and one of the first to rise; therefore all merchants watch the price of iron.

II. *Bank Clearings* are an extremely good barometer of present conditions and are watched with keen interest by all successful merchants and manufacturers. Many large corporations each week compare the changes in their total sales with the changes in the total bank clearings of the country. If they find that bank clearings continually show an increase, while their sales remain fixed, they immediately endeavor to ascertain the reason therefor. Moreover, some firms divide the country

into sections and compare by sections their sales with the bank clearings for said sections, thus having a check on the work of each individual sales office.

III. *Failures* both in number and amount are especially good barometers of the conditions of trade. By ascertaining each month the average number of concerns in active business and the number that have failed, the percentage of failures may be readily determined. Contrary to the ordinary impression, it is too few failures which foretell disaster and panic.

IV. Figures on *Immigration* are carefully studied by manufacturers as indicative of the conditions of the labor market. The arrival of thousands of immigrants at Ellis Island indicates good surface conditions, with high prices for labor; but too large immigration figures foretell a change in conditions, followed by a period of depression. On the other hand, when large numbers of steerage passengers are leaving the country and the incoming steerage is reduced, business is in a state of depression; and only when the tide turns and immigrants again begin to arrive, is it a sign that conditions are again improving.

V. *Money* is the basis of all trade and is therefore probably the most sensitive of all barometers. Money is the representative in value of all things traded in, and the scarcity of it seriously hampers the manufacturer and the merchant. Low money rates usually indicate poor present conditions tending toward improved business; while high rates

usually signify very prosperous present conditions, but often foretell a coming panic. The active merchant, however, not only studies the money rates of this country, but also the average of the bank rates of England, France, and Germany. Each Thursday the Bank of England publishes a statement and makes an announcement as to the rates of discount at which it will handle first-class paper until further notice. This practically fixes the discount rate throughout Great Britain, and a continued rise or fall of the rate in England is sure to be followed eventually by a similar movement in this country.

VI. Figures on *Foreign Trade* are also of great value. The foreign trade of the country bears the same relation to the nation as a whole, as the income and expense of an individual bear to the financial condition of the said individual. A man who for any length of time spends more money than he receives is sure eventually to have trouble, and it is the same with a nation. Moreover, as the financial prosperity of the individual is almost in direct proportion to his net income, so the prosperity of a nation very largely depends upon the volume of its foreign trade.

VII. Monthly *Gold Movements* are also important for study in forecasting money rates, although, like idle car figures, they are of little value after the actual annual figures are published.

VIII. The subject of *Commodity Prices* is very important. The amount of money required to carry on a definite volume of business becomes

very much greater as business increases. For this reason, bankers very carefully watch commodity prices, knowing that high money rates invariably follow a marked increase in commodity prices.

IX. The transactions and *Prices of Stocks* on the New York Stock Exchange are also interesting to merchants as well as to investors. The way money is made on the New York Stock Exchange is by *anticipating* price changes. The leading operators have statisticians continually studying fundamental conditions in order to forecast future conditions, and base their purchases and sales on the information obtained. Therefore a slowly sagging market usually means that the ablest speculators expect in the near future a period of depression in general business; and a slowly rising market usually means that prosperous business conditions may be expected, *unless the decline or rise is artificial and caused by manipulation*. In fact, if it were not for manipulation, merchants could almost rely on the stock market alone as a barometer, and let these large market operators stand the expense of collecting the data necessary for determining fundamental conditions. Unfortunately, however, it is impossible by studying the stock market alone to distinguish between artificial movements and natural movements. Therefore, although bankers and merchants may watch the stock market as *one* of the barometers, they should give to it only a fair and proportional amount of weight.

X. Of all statistics published by the government the most important to the merchant are

Crop Reports. Most of the government figures refer to what has happened in the past, and many of these figures are published a year or more after the events have happened. In the case of the crops, however, the government actually forecasts. Therefore, all crop statistics are especially valuable to manufacturers and merchants.

The crops are the mainstay of America and approximately one half of our population is dependent upon agriculture. Crop conditions formed the basis of James J. Hill's predictions and business ventures. Mr. Hill, by the way, was a great student of fundamental statistics. The principal crops, grain and cotton, have a tremendous influence upon our wealth. Many industries and mercantile firms are absolutely dependent on the crops, and commodity prices are always more or less dependent thereon. The grain reports and cotton reports issued by the government are watched with great interest. Manufacturers and merchants even watch the weather reports throughout the West, the progress of the "grasshopper," the condition of the crops in the Argentine Republic, Russia, and other countries. Abnormal crops are usually followed by a year of uncertain conditions.

XI. *Railroad Earnings* are extremely instructive and are used by some merchants in preference to many of the above subjects. Practically all manufactured goods and even supplies in the local retail stores are shipped by railroads. Therefore, a monthly record of freight which the railroads are carrying serves as a barometer of the business of

all the farmers, manufacturers, and merchants of the country. Moreover, the steel companies, the car and locomotive builders, the coal industry, and a hundred other industries are directly dependent on the railroads for their prosperity. Therefore, all merchants watch railroad earnings and new mileage constructed, and reduce or increase their stock of goods in accordance with what these reports show.

XII. Regarding *Politics*: trade is always dependent upon the wise conduct of our national government. War clouds, even though at first not involving our nation, may affect many commodity and investment prices. Of course, all are not affected in the same way, as a war scare increases the prices of some commodities and reduces the prices of others, but all are affected in some way and to some extent. Even the President's message and especially tariff discussion and the approach of a presidential election somewhat affect trade.

To conclude, each of these twelve subjects is intimately bound up with what are known as "swings," during which all prices change between "high" and "low" in accordance with the Law of Equal Reaction. As stated, all financial and commercial trade during the past two hundred years has been divided into distinct cycles. Each cycle consists of four periods: a period of prosperity, a period of decline, a period of depression, and a period of improvement. Each period is accompanied by distinct changes in the prices of stocks, labor, and commodities. By comparison with similar periods in previous cycles, it is possible

with a degree of certainty to determine at about what period in one of these "swings" we happen to be. If the pendulum swings out over the perpendicular, we are sure that it must swing back of the center as far as it swung forward, *because action and reaction are always equal.*

No country, however, can be prosperous unless it is progressive. No nation can stand still; it must go either forward or backward. The normal demands of our country for new construction must show an increase each year to have conditions even remain constant. There must be a distinct increase in order to keep the vast number of our new citizens busy. Therefore, in comparing the present with the past, a similar figure does not necessarily mean the same conditions, but in many instances may mean an actual falling off. This is very important and must be remembered when estimating an area to use for comparative purposes in connection with the Compositplot which will be described later.*

Conclusion

The amount of money which can be made by the study of such statistics is limited only by the origi-

* Some firms when interpreting figures on each of the various subjects for surface conditions, prefer to determine each month what the proper average figure should be for each of these subjects and note the relation between the actual figures for surface conditions and these average figures. The average figure on any one subject is obtained by plotting the yearly figures on that subject for a period of ten or twenty years and by drawing on that plot a line showing the average trend for the entire period. Firms using this system obtain the average figure for any future time, assuming that the general direction of this average line will continue the same. Moreover, in the case of some subjects, it is often clearer to plot the *relation of present figures to a ten-year average* rather than the actual figures. This is especially true with plotting commodity prices and other figures which show only a slight variation with seasonal changes. The writer, however, believes in this latter method only as a check upon, and not as a substitute for, the Compositplot.

nal capital and the number of years the study is continued. Comparative statistics treat of comparative conditions and are used for selecting securities and commodities which are absolutely safe and which have the greatest prospect of increase in market value *under fixed market conditions*. Fundamental statistics treat of underlying conditions and are employed for determining these general market conditions and whether or not it is wise to purchase, or to sell, or to do neither. Investors use this data in order to purchase securities only when they are low, holding them for from two to four years until they are high, and then selling and depositing in a bank the proceeds received therefrom. After said sale they leave the money on deposit for from two to four years,* until the same securities again sell low, when they withdraw the money and again purchase the same or other high-grade securities.

Many of such investors double their money every few years, with practically no risk and with very little trouble. By a study of these fundamental statistics some individuals, with little risk and without any marginal purchases, but by purchasing outright high-grade, dividend-paying securities, have turned an investment of \$5,000 into \$200,000 in about twenty years. When one realizes the meaning of this,—that an investment of \$20,000 grows to \$1,000,000 within twenty years,—the value of fundamental statistics is apparent.

If one is not strictly an investor, and willing

* If this withdrawal at the time of a panic meant the hoarding of money or taking the money from circulation, we should not recommend any such course. Instead, the money is only withdrawn from one bank and deposited in another, probably being used to liquidate some loan.

under a broker's guidance to take advantage also of certain intermediate movements, which come once or twice a year, possibly greater results are sometimes obtained; but of course this latter method involves risk. Such operations are not based on statistics.

Again, many brokers urge customers to take advantage of declines; recommending "short selling" in periods of great activity and prosperity and also the purchase of securities on margin during periods of depression. Such advice is to be expected from a broker; but with short selling or margin purchases, there are other elements of risk. The investor taking such risks becomes a speculator.

If marginal purchases are undertaken, the margins should be large,—from thirty to forty per cent. Moreover, instead of selling short, the investors may buy "puts" for six months, or, if possible, for longer time, in the London market. These "puts" allow the holder to make nearly as much profit as if he had sold the stock short. Any loss he may sustain is limited to the price for the "put," say from \$100 upward for one hundred shares of stock.

The point, however, which this book would emphasize is that: *An investment of a thousand dollars can be multiplied to an investment of several hundred thousand dollars in about twenty years with but very little risk and without selling short or purchasing on margin.* The only requisite is a constant study of comparative and fundamental statistics and sufficient self-control to act only in accordance with what these statistics clearly indicate, refusing to listen to either the optimism or the pessimism sup-

plied by the daily papers and by the many individuals who are always giving free advice.

The above principles apply to bonds as truly as to stocks, and should be studied by the investors who purchase only bonds, as well as those who purchase stocks. Although bonds do not fluctuate as widely as stocks and for this reason do not present as great an opportunity for profit, yet their *minimum* interest yield is absolutely fixed, which is not true of even the most conservative stocks. Bonds are especially recommended to persons dependent upon the income derived from their investments. Furthermore the writer is inclined to advise that all persons should always have a portion of their principal on deposit in a bank, or in high-grade bonds, short-term notes, or commercial paper.

Merchants who never even buy or sell securities use this data with equal profit. Fundamental statistics clearly show the merchant when to buy and increase his stock of goods, and when to cut prices and reduce his stock. They also enable the merchant to forecast money conditions in order that he may intelligently decide whether to borrow the money necessary to allow customers further credit, or to reduce his loans and the indebtedness of his customers. Moreover, at all times, these figures show the merchant the conditions of business throughout the country, so that he always knows whether the growth or contraction of his business is proportional to that of his competitors.

Upon careful thought, it must be admitted that the fortunes of American merchant princes must

have been created by a knowledge of these facts, rather than simply by selling to the trade at a nominal profit. Therefore, not only does the proper use of fundamental statistics insure a merchant against losses, but their use should be almost as profitable to him as to the investor, enabling him to double and triple his capital every few years. Such ideas of the value of statistics should therefore be especially interesting to the small merchant with capital of, for instance, only \$10,000. For there is no reason why, with fundamental statistics as an aid, his capital should not automatically increase to \$250,000 within twenty years.

Not only do students of fundamental statistics make large fortunes for themselves and their followers, but such students are the very best patriots which a country can produce. The true patriot is he who studies fundamental statistics and acts in accordance with what they teach, liquidating during a period of reckless prosperity and purchasing very heavily during days of panic and great depression. The real traitor today is he who urges on or follows the crowd during a period of prosperity, and then locks up his money and refuses to extend aid during the dark days when banks are failing, railroads are becoming bankrupt and the wheels of industry are stopped. Therefore, with every additional person who unites in this work, the next period of prosperity will be so much less riotous and the next panic so much less severe. There must be a reaction for everything we do, say or think. If it is not a harmful reaction, it is a beneficial one.

CHAPTER II

RANGE OF THE LEADING INVESTMENT STOCKS
SINCE 1860, SHOWING HOW \$2,500 INVESTED
IN 1861 WOULD AMOUNT TO OVER \$2,000,000
IN 1920. SPECIAL TABLES ON INVESTMENT
BONDS.

THE quotations on the following pages show the fluctuations in leading investment stocks from 1860 to date as accurately as may be. Only the best stocks of the period are considered, and the stocks described are *as representative as possible* of the different classes of traffic and of the different sections of the country.

"Central of New Jersey" is a *minority stock*, "St. Paul" is a *speculative stock*, and "Delaware & Hudson" is a *coal stock*. The West is represented by "Great Northern," the Mississippi Valley by "Illinois Central," the South by "Louisville & Nashville," the Central and Middle States by "New York Central" and "Pennsylvania." The New England States are represented by "New York, New Haven & Hartford." "Pullman" was chosen as the most conservative industrial.

Of these ten, only three were in existence and prominent in 1860. New York Central, Illinois Central and Delaware, Lackawanna & Western were active then and are leaders still.

In 1866 "Delaware & Hudson" became active, in 1872 "Louisville & Nashville," and in 1874 "Central of New Jersey." In 1876, "Pullman" became active and in 1890 "Pennsylvania." These are

the ten stocks used exclusively until 1900 when "Delaware, Lackawanna & Western" was, for various reasons, omitted. As "Great Northern" sold for the same price, namely 191, at about that time, that was substituted in its stead.

In other words, only well known stocks have been included in the list. Stocks which have shown any abnormal rise have purposely been avoided. For this reason, stocks such as "Union Pacific," "Atchison," and "Reading" have been omitted. More industrials would have been included, if they had been in existence a longer period. As most of the companies have been organized only a comparatively short number of years, this was not possible. Therefore, the table may be depended upon, absolutely, as showing the fluctuations which a conservative investor may expect.

It has also been very interesting to figure the income received upon the investment, which varied from 5% to 10%. If all "rights" were considered the average income would probably be about 10%; but in this also any possible exaggeration has been avoided. For greater exactness, since "Great Northern" gave its ore certificates, the price of these certificates has been included with the price of the stock. The complete list, as it stood at the low point in 1907 and in January of later years is as follows:—

	Low		Jan.		Jan.	
	Div.	1907	Div.	1910	Div.	1911
Central New Jersey	\$8	\$144	\$8	\$312	\$8	\$270
Chicago, Mil. & St. Paul	7	93	7	158	7	124
Delaware & Hudson	9	124	9	185	9	164

BUSINESS BAROMETERS

	Low Div. 1907	Jan. Div. 1910	Jan. Div. 1911	Jan. Div. 1912	Jan. Div. 1913	Jan. Div. 1914
Central N. J.				\$12 \$310	\$12 \$360	\$12 \$308
Chicago, Mil.						
& St. Paul				7 110	5 113	5 99
Del. & Hud.				9 168	9 162	9 150
G. North, plus						
1 Ore. Cert.	\$7 \$144	\$8 \$225	\$8 \$180	7 170	7 172	7 159
Illinois Cent.	7 116	7 146	7 132	7 140	6 127	5 107
Louis. & Nash.	6 85	5 158	7 145	7 155	7 142	7 134
N. Y. Central	6 89	5 125	6 112	5 107	5 109	5 88
N. Y., N. H.						
& Hartford	8 127	8 158	8 150	8 137	5 128	0 73
Pennsylvania	7 103	6 136	6 129	6 123	6 122	6 109
Pullman	8 135	8 189	8 160	8 160	8 165	8 152
	Jan. Div. 1915	Jan. Div. 1916	Jan. Div. 1917	Jan. Div. 1918	Jan. Div. 1919	Jan. Div. 1920
Central N. J.	\$12 \$295	\$12 \$290	\$12 \$300	\$12 \$220	\$12 \$207	\$175
Chicago, Mil.						
& St. Paul	4 87	5 95	4 87	0 41	0 36	35
Del. & Hud.	9 142	9 150	9 150	9 106	9 101	93
G. North, plus						
1 Ore. Cert.	7 138	7 162	7 150	7 111	7 122	114
Illinois Cent.	9 107	6 105	7 105	7 92	7 95	88
Louis. & Nash.	5 112	6 124	7 128	7 110	7 113	106
N. Y. Central	5 85	5 104	5 100	5 68	5 69	68
N. Y., N. H.						
& Hartford	0 49	0 65	0 40	0 28	0 28	26
Pennsylvania	6 104	6 114	6 113	6 90	6 89	82
Pullman	8 152	8 164	8 163	8 100	8 120	114

The list includes "Central of New Jersey," and "Chicago, Milwaukee & St. Paul," in order to tabulate a minority stock and a speculative stock. As an investment, however, others may be preferable. When substituting them, some brokers recommend selecting stocks selling for about the same prices as those omitted. It should always be remembered that an investor, when buying or selling, should not study the present prices of the stocks which he intends to purchase, but rather the prices of a large number of representative stocks. The list must be sufficient to show the effect of the Law of Equal Reaction. This is because he should buy or sell *in accordance with general conditions*, and not be governed by the price of any stocks which he happens to hold.

The actual low and high prices of the above ten stocks from 1860 to date are given in the accompanying tables. The "*averages*" given at the beginning of each year previous to 1877 are averages of all the *high* and all the *low* prices, regardless of what day in the year they occurred, and therefore may be a *theoretical* rather than an *actual* figure, while quotations from the beginning of 1877 are the averages of the stocks named, all figures being taken on the same date.

1860 AVERAGE 59-93

Lackawanna ranged from 54 (Jan.) to 99 (June); Ill. Cent. 55 (Jan.) to 89 (Aug.); N. Y. Cent. 92 (Sept.) to 69 (Dec.).

1861 AVERAGE 62-84

Lackawanna ranged from 84 (Mch.) to 65 (Dec.); Ill. Cent. 88 (Jan.) to 55 (April); N. Y. Cent. 82 (Jan.) to 68 (April).

1862 AVERAGE 71-107

Lackawanna ranged from 80 (April) to 130 (Dec.); Ill. Cent. 55 (July) to 84 (Oct.); N. Y. Cent. 79 (Jan.) to 107 (Oct.).

1863 AVERAGE 106-153

Lackawanna ranged from 130 (Jan.) to 198 (Dec.); Ill. Cent. 83 (Jan.) to 126 (Aug.); N. Y. Cent. 107 (Mch.) to 140 (Sept.).

1864 AVERAGE 141-177

Lackawanna ranged from 195 (Jan.) to 265 (Sept.); Ill. Cent. 117 (Jan.) to 135 (Oct.); N. Y. Cent. 145 (Mch.) to 109 (Oct.).

1865 AVERAGE 125-158

Lackawanna ranged from 225 (Jan.) to 199 (Mch.); Ill. Cent. 92 (Mch.) to 130 (July); N. Y. Cent. 119 (Jan.) to 85 (April).

1866 AVERAGE 99-128

St. Paul ranged from 41 (Mch.) to 64 (Nov.); Del. & Hud. 132 (Mch.) to 160 (Nov.); Lackawanna 162 (Aug.) to 124 (Mch.); Ill. Cent. 131 (Jan.) to 112 (Feb.); N. Y. Cent. 86 (Feb.) to 123 (Nov.).

1867 AVERAGE 98-122

Cent. of N. J. ranged from 125 (Jan.) to 113 (Dec.); St. Paul 25 (April) to 54 (July); Del. & Hud. 139 (Jan.) to 156 (Jan.); Lackawanna 130 (July) to 109 (Oct.); Ill. Cent. 111 (Jan.) to 135 (Dec.); N. Y. Cent. 94 (Feb.) to 118 (Dec.); New Haven 114 (Jan.) to 140 (Dec.).

1868 AVERAGE 108-144

Cent. of N. J. ranged from 126 (June) to 110 (Dec.); St. Paul 46 (Feb.) to 111 (Oct.); Del. & Hud. 165 (May) to 119 (Aug.); Lackawanna 110 (Jan.) to 132 (Oct.); Ill. Cent. 130 (Jan.) to 159 (July); N. Y. Cent. 110 (April) to 159 (Dec.); New Haven 133 (Jan.) to 159 (May).

1869 AVERAGE 114-144

St. Paul ranged from 84 (Aug.) to 61 (Sept.); Del. & Hud. 134 (June) to 120 (Dec.); Lackawanna 120 (Jan.) to 104 (Nov.); Ill. Cent. 148 (May) to 130 (Dec.); N. Y. Cent. 217 (July) to 153 (Sept.); New Haven 160 (Jan.) to 120 (April).

1870 AVERAGE 102-120

St. Paul ranged from 75 (Jan.) to 52 (Dec.); Del. & Hud. 115 (Mch.) to 127 (July); Lackawanna 112 (May) to 100 (Sept.); Ill. Cent. 145 (Feb.) to 129 (July); N. Y. Cent. 86 (Jan.) to 102 (June); New Haven 134 (Jan.) to 159 (June).

1871 AVERAGE 103-117

St. Paul ranged from 48 (Jan.) to 64 (Sept.); Del. & Hud. 115 (Feb.) to 125 (Dec.); Lackawanna 102 (Feb.) to 111 (Sept.); Ill. Cent. 139 (Jan.) to 132 (Oct.); N. Y. Cent. 103 (April) to 84 (Oct.); New Haven 140 (April) to 160 (June).

1872 AVERAGE 97-110

St. Paul ranged from 64 (April) to 51 (Nov.); Del. & Hud. 124 (Jan.) to 115 (Oct.); Lackawanna 112 (Mch.) to 91 (Dec.); Ill. Cent. 140 (June) to 119 (Nov.); Louis. & Nash. 81 (Oct.) to 79 (Dec.); N. Y. Cent. 101 (April) to 89 (Nov.); New Haven 168 (June) to 138 (Dec.).

1873 AVERAGE 75-106

St. Paul ranged from 62 (April) to 21 (Nov.); Del. & Hud. 124 (Feb.) to 99 (Nov.); Lackawanna 106 (June) to 79 (Nov.); Ill. Cent. 126 (Jan.) to 90 (Nov.); Louis. & Nash. 79 (Mch.) to 50 (Dec.); N. Y. Cent. 106 (Feb.) to 77 (Nov.); New Haven 142 (Feb.) to 112 (Nov.).

1874 AVERAGE 87-100

Cent. of N. J. ranged from 98 (Jan.) to 109 (Feb.); St. Paul 49 (Jan.) to 31 (May); Del. & Hud. 121 (Jan.) to 113 (Aug.); Lackawanna 99 (Jan.) to 112

(Feb.); Ill. Cent. 108 (Feb.) to 90 (Oct.); Louis. & Nash. 53 (Jan.) to 59 (Feb.); N. Y. Cent. 105 (Mch.) to 95 (May); New Haven 122 (Jan.) to 139 (Nov.).

1875 AVERAGE 87-100

Cent. of N. J. ranged from 120 (April) to 99 (Oct.); St. Paul 40 (April) to 28 (June); Del. & Hud. 110 (Feb.) to 124 (Dec.); Lackawanna 106 (Jan.) to 123 (April); Ill. Cent. 106 (April) to 88 (Oct.); Louis. & Nash. 40 (Feb.) to 36 (April); N. Y. Cent. 100 (May) to 107 (May); New Haven 133 (Jan.) to 147 (Dec.).

1876 AVERAGE 62-100

Cent. of N. J. ranged from 109 (Feb.) to 21 (Sept.); St. Paul 46 (Feb.) to 18 (Nov.); Del. & Hud. 125 (Jan.) to 61 (Oct.); Lackawanna 120 (Jan.) to 64 (Oct.); Ill. Cent. 103 (Mch.) to 60 (Dec.); Louis. & Nash. 32 (April) to 24 (Dec.); N. Y. Cent. 117 (Feb.) to 96 (Sept.); New Haven 146 (Jan.) to 159 (Mch.); Pullman 70 (Jan.) to 85 (April).

1877 AVERAGE 54-75

Cent. of N. J. ranged from 37 (Jan.) to 6 (June); St. Paul 11 (April) to 42 (Oct.); Del. & Hud. 74 (Jan.) to 25 (June); Lackawanna 77 (Jan.) to 30 (June); Ill. Cent. 40 (April) to 79 (Oct.); Louis. & Nash. 26 (Mch.) to 41 (Dec.); N. Y. Cent. 85 (April) to 109 (Oct.); New Haven 146 (April) to 158 (Dec.); Pullman 75 (Feb.) to 71 (Mch.).

1878 AVERAGE 69-82

Cent. of N. J. ranged from 13 (Jan.) to 45 (July); St. Paul 54 (June) to 27 (Sept.); Del. & Hud. 59

(July) to 34 (Dec.); Lackawanna 61 (July) to 41 (Dec.); Ill. Cent. 72 (Feb.) to 87 (July); Louis. & Nash. 35 (Oct.) to 39 (Dec.); N. Y. Cent. 103 (Mch.) to 115 (Sept.); New Haven 153 (Jan.) to 162 (Nov.); Pullman 72 (Feb.) to 80 (July).

1879 AVERAGE 69-104

Cent. of N. J. ranged from 33 (Jan.) to 89 (Nov.); St. Paul 34 (Jan.) to 82 (Nov.); Del. & Hud. 38 (Feb.) to 89 (Nov.); Lackawanna 43 (Jan.) to 94 (Nov.); Ill. Cent. 79 (Mch.) to 100 (Dec.); Louis. & Nash. 35 (Feb.) to 89 (Dec.); N. Y. Cent. 112 (Mch.) to 139 (Nov.); New Haven 171 (June) to 154 (Nov.); Pullman 73 (Jan.) to 109 (Nov.).

1880 AVERAGE 99-123

Cent. of N. J. ranged from 90 (Mch.) to 45 (May); St. Paul 66 (May) to 114 (Dec.); Del. & Hud. 60 (May) to 92 (Dec.); Lackawanna 68 (May) to 110 (Dec.); Ill. Cent. 99 (Jan.) to 127 (Dec.); Louis. & Nash. 174 (Nov.) to 77 (Dec.); N. Y. Cent. 122 (May) to 155 (Dec.); New Haven 155 (Jan.) to 180 (Oct.); Pullman 107 (Jan.) to 146 (Dec.).

1881 AVERAGE 121-134

Cent. of N. J. ranged from 82 (Jan.) to 112 (Feb.); St. Paul 101 (Feb.) to 129 (June); Del. & Hud. 89 (Jan.) to 115 (Mch.); Lackawanna 107 (Jan.) to 131 (Mch.); Ill. Cent. 124 (Jan.) to 146 (May); Louis. & Nash. 79 (Feb.) to 110 (May); N. Y. Cent. 155 (Jan.) to 130 (Dec.); New Haven 164 (Mch.) to 190 (June); Pullman 151 (Jan.) to 120 (Dec.).

1882 AVERAGE 113-126

Cent. of N. J. ranged from 97 (Feb.) to 63 (Nov.); St. Paul 128 (Sept.) to 96 (Nov.); Del. & Hud. 102 (Mch.) to 119 (Aug.); Lackawanna 116 (April) to 150 (Sept.); Ill. Cent. 127 (Jan.) to 150 (Oct.); Louis. & Nash. 100 (Jan.) to 46 (Nov.); N. Y. Cent. 123 (May) to 138 (Aug.); New Haven 168 (Feb.) to 186 (Nov.); Pullman 145 (Jan.) to 117 (June).

1883 AVERAGE 109-119

Cent. of N. J. ranged from 68 (Jan.) to 90 (Oct.); St. Paul 108 (Jan.) to 91 (Dec.); Del. & Hud. 112 (April) to 102 (Oct.); Lackawanna 131 (April) to 111 (Oct.); Ill. Cent. 148 (June) to 124 (Aug.); Louis. & Nash. 58 (Jan.) to 40 (Aug.); N. Y. Cent. 129 (Mch.) to 111 (Dec.); New Haven 169 (Jan.) to 183 (June); Pullman 134 (June) to 112 (Dec.).

1884 AVERAGE 85-113

Cent. of N. J. ranged from 90 (Jan.) to 37 (Dec.); St. Paul 94 (Jan.) to 58 (June); Del. & Hud. 114 (Feb.) to 67 (Dec.); Lackawanna 133 (Mch.) to 86 (Dec.); Ill. Cent. 140 (Feb.) to 110 (June); Louis. & Nash. 51 (Mch.) to 22 (June); N. Y. Cent. 122 (Mch.) to 83 (Nov.); New Haven 184 (May) to 175 (July); Pullman 117 (Jan.) to 90 (May).

1885 AVERAGE 86-111

Cent. of N. J. ranged from 31 (Mch.) to 52 (Aug.); St. Paul 64 (June) to 99 (Nov.); Del. & Hud. 66 (Jan.) to 100 (Nov.); Lackawanna 82 (Jan.) to 129 (Dec.); Ill. Cent. 119 (Jan.) to 140

(Dec.); Louis. & Nash. 22 (Jan.) to 51 (Nov.); N. Y. Cent. 81 (June) to 107 (Nov.); New Haven 175 (Jan.) to 204 (Dec.); Pullman 107 (Jan.) to 137 (Nov.).

1886 AVERAGE 106-118

Cent. of N. J. ranged from 42 (Jan.) to 64 (Sept.); St. Paul 82 (May) to 96 (Dec.); Del. & Hud. 87 (Dec.) to 108 (Feb.); Lackawanna 115 (Jan.) to 144 (Dec.); Ill. Cent. 143 (Feb.) to 130 (Dec.); Louis. & Nash. 33 (May) to 69 (Dec.); N. Y. Cent. 98 (May) to 117 (Oct.); New Haven 204 (Jan.) to 223 (Nov.); Pullman 128 (May) to 147 (Oct.).

1887 AVERAGE 112-125

Cent. of N. J. ranged from 55 (Jan.) to 86 (April); St. Paul 95 (May) to 69 (Oct.); Del. & Hud. 96 (Sept.) to 106 (Nov.); Lackawanna 139 (June) to 123 (Oct.); Ill. Cent. 138 (May) to 114 (Oct.); Louis. & Nash. 70 (April) to 54 (Oct.); N. Y. Cent. 114 (May) to 101 (Oct.); New Haven 208 (Feb.) to 233 (May). Pullman 159 (May) to 136 (Nov.).

1888 AVERAGE 113-126

Cent. of N. J. ranged from 73 (April) to 95 (Dec.); St. Paul 78 (Feb.) to 59 (Dec.); Del. & Hud. 103 (Jan.) to 134 (Dec.); Lackawanna 123 (April) to 145 (Oct.); Ill. Cent. 123 (Aug.) to 113 (Dec.); Louis. & Nash. 64 (Jan.) to 50 (April); N. Y. Cent. 102 (April) to 111 (Sept.); New Haven 215 (Jan.) to 244 (Dec.); Pullman 135 (April) to 175 (Sept.).

1889 AVERAGE 123-136

Cent. of N. J. ranged from 92 (Mch.) to 131 (Oct.); St. Paul 60 (Mch.) to 75 (June); Del. & Hud. 130 (Mch.) to 156 (Sept.); Lackawanna 134 (April) to 151 (Sept.); Ill. Cent. 106 (Feb.) to 118 (Dec.); Louis. & Nash. 56 (Jan.) to 87 (Nov.); N. Y. Cent. 110 (Feb.) to 104 (July); New Haven 241 (Jan.) to 279 (Sept.); Pullman 205 (Feb.) to 171 (Mch.).

1890 AVERAGE 118-142

Cent. of N. J. ranged from 128 (May) to 92 (Nov.); St. Paul 78 (May) to 44 (Nov.); Del. & Hud. 175 (May) to 120 (Dec.); Lackawanna 149 (July) to 123 (Nov.); Ill. Cent. 120 (Jan.) to 85 (Nov.); Louis. & Nash. 92 (May) to 65 (Nov.); N. Y. Cent. 111 (June) to 95 (Dec.); New Haven 244 (Jan.) to 270 (June); Pennsylvania 113 (May) to 95 (Nov.); Pullman 222 (July) to 160 (Dec.).

1891 AVERAGE 115-128

Cent. of N. J. ranged from 122 (April) to 105 (June); St. Paul 51 (Mch.) to 82 (Dec.); Del. & Hud. 140 (Sept.) to 120 (Dec.); Lackawanna 130 (July) to 145 (Sept.); Ill. Cent. 90 (Mch.) to 109 (Dec.); Louis. & Nash. 65 (Aug.) to 83 (Dec.); N. Y. Cent. 98 (July) to 119 (Dec.); New Haven 271 (Feb.) to 224 (Nov.); Pennsylvania 99 (May) to 115 (Dec.); Pullman 196 (Jan.) to 172 (Nov.).

1892 AVERAGE 126-135

Cent. of N. J. ranged from 111 (Jan.) to 145 (Feb.); St. Paul 75 (April) to 84 (Aug.) Del. &

Hud. 122 (Jan.) to 149 (April); Lackawanna 138 (Jan.) to 167 (Feb.); Ill. Cent. 110 (Jan.) to 95 (Sept.); Louis. & Nash. 84 (Jan.) to 64 (Sept.); N. Y. Cent. 119 (Mch.) to 107 (Sept.); New Haven 224 (Jan.) to 255 (Dec.); Pennsylvania 114 (Jan.) to 106 (Nov.); Pullman 184 (Jan.) to 200 (May).

1893 AVERAGE 102-135

Cent. of N. J. 132 (Jan.) to 84 (July); St. Paul 83 (Jan.) to 46 (July); Del. & Hud. 139 (Jan.) to 102 (July); Lackawanna 127 (July) to 175 (Nov.); Ill. Cent. 104 (Jan.) to 86 (July); Louis. & Nash. 77 (Jan.) to 39 (Dec.); N. Y. Cent. 111 (Jan.) to 92 (July); New Haven 262 (Jan.) to 188 (Sept.); Pennsylvania 111 (Jan.) to 93 (Dec.); Pullman 206 (April) to 132 (Aug.).

1894 AVERAGE 106-115

Cent. of N. J. ranged from 117 (Mch.) to 87 (Dec.); St. Paul 54 (Jan.) to 67 (Sept.); Del. & Hud. 144 (April) to 119 (Oct.); Lackawanna 174 (Sept.) to 155 (Oct.); Ill. Cent. 95 (Sept.) to 82 (Dec.); Louis. & Nash. 40 (Jan.) to 57 (Sept.); N. Y. Cent. 95 (May) to 102 (Aug.); New Haven 178 (July) to 197 (Dec.); Pennsylvania 96 (Jan.) to 104 (April); Pullman 174 (April) to 152 (July).

1895 AVERAGE 105-121

Cent. of N. J. ranged from 81 (Feb.) to 116 (Sept.); St. Paul 53 (Mch.) to 78 (Sept.); Del. & Hud. 134 (Sept.) to 118 (Dec.); Lackawanna 174 (Oct.) to 154 (Dec.); Ill. Cent. 81 (Jan.) to 106 (Sept.); Louis. & Nash. 66 (Sept.) to 39 (Dec.);

N. Y. Cent. 104 (Aug.) to 90 (Dec.); New Haven 218 (June) to 174 (Dec.); Pennsylvania 97 (Jan.) to 115 (Sept.); Pullman 178 (June) to 146 (Dec.).

1896 AVERAGE 99-113

Cent. of N. J. ranged from 87 (Aug.) to 110 (Nov.); St. Paul 59 (Aug.) to 80 (Nov.); Del. & Hud. 129 (Feb.) to 114 (Aug.); Lackawanna 166 (June) to 138 (Aug.); Ill. Cent. 98 (Jan.) to 84 (Aug.); Louis. & Nash. 55 (Feb.) to 37 (Aug.); N. Y. Cent. 99 (Feb.) to 88 (Aug.); New Haven 184 (Jan.) to 160 (July); Pennsylvania 109 (April) to 99 (Aug.); Pullman 164 (Feb.) to 138 (Aug.).

1897 AVERAGE 104-124

Cent. of N. J. ranged from 103 (Jan.) to 68 (May); St. Paul 69 (April) to 102 (Sept.); Del. & Hud. 99 (April) to 123 (Sept.); Lackawanna 146 (May) to 164 (Aug.); Ill. Cent. 91 (April) to 110 (Aug.); Louis. & Nash. 40 (April) to 63 (Sept.); N. Y. Cent. 92 (Feb.) to 115 (Sept.); New Haven 160 (Feb.) to 185 (Sept.); Pennsylvania 103 (Jan.) to 119 (Sept.); Pullman 152 (Jan.) to 185 (Sept.).

1898 AVERAGE 115-127

Cent. of N. J. ranged from 84 (Nov.) to 99 (Dec.); St. Paul 83 (April) to 120 (Dec.); Del. & Hud. 114 (Feb.) to 93 (Nov.); Lackawanna 159 (Feb.) to 140 (Oct.); Ill. Cent. 96 (April) to 115 (Dec.); Louis. & Nash. 44 (April) to 65 (Dec.); N. Y. Cent. 105 (Mch.) to 124 (Dec.); New Haven 178 (Jan.) to 201 (Dec.); Pennsylvania 110 (Mch.) to 123 (Dec.); Pullman 216 (July) to 132 (Nov.).

1899 AVERAGE 126-144

Cent. of N. J. ranged from 97 (Jan.) to 126 (Nov.); St. Paul 136 (Sept.) to 112 (Dec.); Del. & Hud. 106 (Jan.) to 135 (Sept.); Lackawanna 157 (Jan.) to 194 (Oct.); Ill. Cent. 122 (Jan.) to 105 (Dec.); Louis. & Nash. 63 (Mch.) to 88 (Oct.); N. Y. Cent. 144 (Mch.) to 120 (Dec.); New Haven 198 (Jan.) to 222 (April); Pennsylvania 122 (Jan.) to 142 (Jan.); Pullman 156 (Jan.) to 207 (Oct.).

1900 AVERAGE 132-155

Cent. of N. J. ranged from 115 (Jan.) to 150 (Dec.); St. Paul 108 (June) to 148 (Dec.); Del. & Hud. 106 (Sept.) to 134 (Dec.); *Gt. Northern 144 (June) to 191 (Dec.); Ill. Cent. 110 (June) to 132 (Dec.); Louis. & Nash. 68 (Sept.) to 89 (Dec.); N. Y. Cent. 125 (June) to 145 (Dec.); New Haven 215 (Jan.) to 207 (Sept.); Pennsylvania 124 (Sept.) to 149 (Dec.); Pullman 176 (June) to 204 (Dec.).

1901 AVERAGE 154-172

Cent. of N. J. 145 (Jan.) to 196 (Dec.); St. Paul 134 (May) to 188 (May); Del. & Hud. 185 (April) to 105 (May); Gt. Northern 208 (Mch.) to 167 (May); Ill. Cent. 124 (May) to 154 (June); Louis. & Nash. 76 (May) to 111 (June); N. Y. Cent. 128 (Jan.) to 174 (Nov.); New Haven 206 (Feb.) to 217 (June); Pennsylvania 161 (April) to 137 (May); Pullman 195 (Jan.) to 225 (Oct.).

1902 AVERAGE 170-190

Cent. of N. J. ranged from 198 (Jan.) to 165 (Nov.); St. Paul 160 (Jan.) to 198 (Sept.); Del. &

* Great Northern is substituted here for Lackawanna with the Ore Certificates added beginning with 1907.

Hud. 184 (Jan.) to 153 (Nov.); Gt. Northern 181 (Mch.) to 203 (Dec.); Ill. Cent. 137 (Jan.) to 173 (Aug.); Louis. & Nash. 102 (Jan.) to 159 (Aug.); N. Y. Cent. 168 (Jan.) to 147 (Nov.); New Haven 209 (Jan.) to 255 (April); Pennsylvania 147 (Jan.) to 170 (Sept.); Pullman 215 (Jan.) to 250 (April).

1903 AVERAGE 146-180

Cent. of N. J. ranged from 190 (Jan.) to 153 (Oct.); St. Paul 183 (Jan.) to 133 (Aug.); Del. & Hud. 183 (Feb.) to 149 (Aug.); Gt. Northern 209 (Jan.) to 160 (Oct.); Ill. Cent. 151 (Jan.) to 125 (July); Louis. & Nash. 130 (Jan.) to 95 (Sept.); N. Y. Cent. 156 (Jan.) to 112 (July); New Haven 225 (Jan.) to 187 (May); Pennsylvania 157 (Jan.) to 110 (Nov.); Pullman 235 (Jan.) to 196 (July).

1904 AVERAGE 148-181

Cent. of N. J. ranged from 154 (Feb.) to 194 (Nov.); St. Paul 137 (Feb.) to 177 (Dec.); Del. & Hud. 149 (Mch.) to 190 (Dec.); Gt. Northern 170 (Mch.) to 242 (Dec.); Ill. Cent. 125 (Feb.) to 159 (Dec.); Louis. & Nash. 101 (Feb.) to 148 (Dec.); N. Y. Cent. 112 (Mch.) to 145 (Dec.); New Haven 185 (May) to 199 (Oct.); Pennsylvania 111 (Mch.) to 140 (Dec.); Pullman 209 (Mch.) to 242 (Nov.).

1905 AVERAGE 180-204

Cent. of N. J. ranged from 190 (May) to 235 (Oct.); St. Paul 168 (May) to 187 (Aug.); Del. & Hud. 178 (May) to 240 (Oct.); Gt. Northern 236 (Jan.) to 335 (April); Ill. Cent. 152 (Jan.) to 183 (Sept.); Louis. & Nash. 134 (Jan.) to 157 (Sept.);

N. Y. Cent. 167 (Mch.) to 136 (May); New Haven 216 (Sept.) to 191 (Dec.); Pennsylvania 131 (May) to 148 (Aug.); Pullman 230 (May) to 258 (Aug.).

1906 AVERAGE 180-205

Cent. of N. J. ranged from 204 (May) to 239 (May); St. Paul 189 (Nov.) to 146 (Dec.); Del. & Hud. 189 (May) to 232 (Dec.); Gt. Northern 348 (Feb.) to 249 (Dec.); Ill. Cent. 164 (May) to 184 (June); Louis. & Nash. 156 (Jan.) to 136 (May); N. Y. Cent. 156 (Jan.) to 126 (Nov.); New Haven 204 (Jan.) to 189 (Dec.); Pennsylvania 147 (Jan.) to 122 (July); Pullman 270 (Nov.) to 180 (Dec.).

1907 AVERAGE 119-183

Cent. of N. J. ranged from 220 (Jan.) to 144 (Nov.); St. Paul 157 (Jan.) to 93 (Nov.); Del. & Hud. 227 (Jan.) to 124 (Nov.); Gt. Northern *274 (Jan.) to 144 (Oct.); Ill. Cent. 172 (Jan.) to 116 (Nov.); Louis. & Nash. 145 (Jan.) to 85 (Nov.); N. Y. Cent. 134 (Jan.) to 89 (Dec.); New Haven 189 (Jan.) to 127 (Nov.); Pennsylvania 141 (Jan.) to 103 (Nov.); Pullman 181 (Jan.) to 135 (Nov.).

1908 AVERAGE 126-164

Cent. of N. J. ranged from 160 (Feb.) to 229 (Dec.); St. Paul 103 (Jan.) to 152 (Dec.); Del. & Hud. 141 (Feb.) to 181 (Dec.); Gt. Northern 163 (Feb.) to *223 (Dec.); Ill. Cent. 122 (Feb.) to 150 (Nov.); Louis. & Nash. 87 (Feb.) to 126 (Dec.); N. Y. Cent. 90 (Jan.) to 126 (Dec.); New Haven 128 (Jan.) to 161 (Nov.); Pennsylvania 109 (Jan.) to 132 (Dec.); Pullman 147 (Jan.) to 174 (Nov.).

* These prices include the price of one Ore Certificate.

1909 AVERAGE 156-190

Cent. of N. J. ranged from 215 (Feb.) to 323 (Sept.); St. Paul 141 (Feb.) to 165 (Sept.); Del. & Hud. 168 (Feb.) to 200 (May); Gt. Northern 201 (Feb.) to *246 (Aug.); Ill. Cent. 137 (Feb.) to 162 (Aug.); Louis. & Nash. 121 (Jan.) to 162 (Aug.); N. Y. Cent. 120 (Feb.) to 147 (Aug.); New Haven 174 (June) to 154 (Nov.); Pennsylvania 126 (Feb.) to 151 (Sept.); Pullman 169 (Jan.) to 200 (Aug.)

1910 AVERAGE 150-179

Cent. of N. J. ranged from 312 (Jan.) to 248 (July); St. Paul 158 (Jan.) to 114 (June); Del. & Hud. 185 (Jan.) to 149 (July); Gt. Northern *224 (Jan.) to 163 (July); Ill. Cent. 147 (Jan.) to 124 (July); Louis. & Nash. 160 (Jan.) to 132 (July); N. Y. Cent. 128 (Mch.) to 105 (July); New Haven 162 (Mch.) to 149 (April); Pennsylvania 138 (Mch.) to 122 (July); Pullman 200 (Jan.) to 155 (June).

1911 AVERAGE 147-163

Cent. of N. J. ranged from 260 (Aug.) to 320 (Dec.); St. Paul 134 (Feb.) to 106 (Oct.); Del. & Hud. 175 (June) to 160 (Sept.); Gt. Northern *203 (June) to 163 (Sept.); Ill. Cent. 132 (Jan.) to 147 (July); Louis. & Nash. 136 (Sept.) to 161 (Nov.); N. Y. Cent. 115 (Feb.) to 100 (Sept.); New Haven 151 (Feb.) to 127 (Sept.); Pennsylvania 130 (Feb.) to 119 (Sept.); Pullman 163 (Jan.) to 154 (Sept.).

* These prices include the price of one Ore Certificate.

1912 AVERAGE 157-170

Cent. of N. J. ranged from 305 (Jan.) to 395 (Apr.); St. Paul 99 (July) to 117 (Nov.); Del. & Hud. 175 (Feb.) to 162 (Dec.); Gt. Northern *165 (Jan.) to 187 (Aug.); Ill. Cent. 141 (Jan.) to 120 (May); Louis. & Nash. 170 (Aug.) to 138 (Dec.); N. Y. Cent. 121 (Apr.) to 106 (Dec.); New Haven 142 (Apr.) to 126 (Dec.); Pennsylvania 126 (Oct.) to 119 (Dec.); Pullman 158 (Feb.) to 175 (Aug.).

1913 AVERAGE 132-161

Cent. of N. J. ranged from 362 (Jan.) to 275 (June); St. Paul 116 (Jan.) to 97 (Nov. and Dec.); Del. & Hud. 167 (Jan.) to 148 (June); Gt. Northern plus 1 ore ctf. 174 (Jan.) to 141 (June); Ill. Cent. 129 (Feb.) to 103 (Dec.); Louis. & Nash. 142 (Jan.) to 126 (June); N. Y. Cent. 110 (Jan.) to 90 (Dec.); New Haven 130 (Jan.) to 66 (Dec.); Pennsylvania 124 (Jan.) to 106 (Dec.); Pullman 165 (Jan.) to 149 (Sept.).

†1914 AVERAGE 128-145

Cent. of N. J. ranged from 315 (Mar.) to 300 (July); St. Paul 107 (Feb.) to 85 (Dec.); Del. & Hud. 160 (Feb.) to 139 (Dec.); Gt. Northern *173 (Feb.) to 135 (Dec.); Ill. Cent. 115 (Jan. and Feb.) to 104 (Dec.); Louis. & Nash. 142 (Jan.) to 125 (Dec.); N. Y. Cent. 97 (Jan.) to 77 (July); New Haven 78 (Jan.) to 50 (July); Pennsylvania 116 (Jan.) to 103 (Dec.); Pullman 159 (Jan.) to 150 (Dec.).

* These prices include the price of one Ore Certificate.

† The Exchange was closed from July to December, during which time the unofficial prices were quoted even lower than those named above.

1915 AVERAGE 129-146

Cent. of N. J. ranged from 325 (Jan.) to 250 (Sept.); St. Paul 78 (July) to 101 (Dec.); Del. & Hud. 138 (Aug.) to 154 (Nov.); Gt. Northern plus 1 ore ctf. 138 (Jan.) to 181 (Nov.); Ill. Cent. 113 (April) to 99 (July); Louis & Nash. 104 (July) to 130 (Nov.); N. Y. Cent. 81 (Mch.) to 110 (Dec.); New Haven 43 (Feb.) to 89 (Oct.); Pennsylvania 104 (Feb. and Mch.) to 122 (Nov.); Pullman 150 (Mch.) to 170 (Oct.).

1916 AVERAGE 135-144

Cent. of N. J. ranged from 289 (Jan.) to 310 (May and Dec.); St. Paul 102 (Jan.) to 89 (Dec.); Del. & Hud. 159 (Oct. and Nov.) to 150 (Dec.); Gt. Northern plus 1 ore ctf. 178 (Jan.) to 147 (Dec.); Ill. Cent. 100 (Apr.) to 110 (Oct.); Louis. & Nash. 121 (Mar.) to 140 (Oct.); N. Y. Cent. 100 (Apr.) to 116 (Oct.); New Haven 78 (Jan.) to 50 (Dec.); Pennsylvania 55 (Aug.) to 60 (Oct.); Pullman 160 (May) to 177 (Sept.).

1917 AVERAGE 98-138

Cent. of N. J. ranged from 277 (Dec.) to 302 (Feb.); St. Paul 35 (Nov. and Dec.) to 92 (Jan.); Del. & Hud. 87 (Nov.) to $151\frac{7}{8}$ (Jan.); Gt. Northern plus 1 ore ctf. $79\frac{1}{4}$ (Dec.) to $118\frac{1}{4}$ (Jan.); Ill. Cent. $85\frac{3}{4}$ (Dec.) to $106\frac{3}{8}$ (Jan.); Louis. & Nash. 103 (Dec.) to $133\frac{3}{4}$ (Jan.); N. Y. Cent. $62\frac{1}{2}$ (Dec.) to $103\frac{5}{8}$ (Jan.); New Haven $21\frac{1}{2}$ (Sept.) to $52\frac{7}{8}$ (Jan.); Pennsylvania $40\frac{1}{4}$ (Dec.) to $57\frac{3}{8}$ (Jan.); Pullman $106\frac{1}{4}$ (Dec.) to $167\frac{1}{2}$ (Jan.).

1918 AVERAGE 104-118

Cent. of N. J. ranged from 202 (Apr.) to 220 (Nov.); St. Paul 37 (Apr.) to 54 (Sept.); Del. & Hud. 100 (Apr.) to 120 (Nov.); Gt. Northern plus 1 ore ctf. 111 (Jan.) to 141 (Nov.); Ill. Cent. 92 (Jan.) to 106 (Nov.); Louis. & Nash. 110 (Jan.) to 125 (Nov.); N. Y. Cent. 68 (Jan. and Apr.) to 85 (Nov.); New Haven 27 (Apr.) to 46 (May); Pennsylvania 87 (Dec.) to 100 (Nov.); Pullman 100 (Jan.) to 132 (Nov.).

1919 AVERAGE 86-117

Cent. of N. J. ranged from 170 (Sept.) to 213 (Aug.); St. Paul 34 (Dec.) to 53 (July); Del. and Hud. 92 (Dec.) to 116 (May); Gt. Northern plus 1 ore ctf. 107 (Dec.) to 153 (May); Ill. Cent. 86 (Dec.) to 104 (May); Louis. & Nash. 105 (Aug.) to 123 (May); N. Y. Cent. 67 (Dec.) to 84 (June); New Haven 25 (Dec.) to 41 (July); Penn. 40 (Dec.) to 49 (May); Pullman 110 (Nov.) to 133 (July).

Possibilities of Profit in Conservative Investment Stocks

Suppose \$2,500 had been invested in 1861, in the stocks given in the preceding pages, and they had been bought and sold again, every three or four years, what would have been the history of that \$2,500? To what would it have amounted today?

In detail the answer would be as follows: Starting in 1861 with an original principal of \$2,500, the dividends for three and one-half years at 5% amount to \$705. Assume that we invest the \$2,500 in the leading stocks of 1861 at their average low price (as given in the preceding chapter) of 62, and hold the stocks for said three and one-half years until the average price reaches 160 in 1865, when we sell for \$6,448, which, together with the interest above mentioned, makes a total of \$7,153. We leave this amount on deposit in a bank for two years at 4%, so that we have \$7,737 to invest in 1867 when the average again falls to 100. We believe that with this introduction the table is self-explanatory.

Original Principal invested	1861		\$2,500
@ 62.....	1861		
Dividends 3½ yrs. @ 5% to	1865	\$705	
Princ. bought @ 62-1861,			
sold @ 160.....	1865	6,448	
Total Princ. & Dividends.	1865		7,153
Comp. Int. @ 4% 2 yrs.			
Princ. & Int. to.....	1867		7,737
Invested @ 100 in 1867...			
Dividends 2 yrs. @ 5% to	1869	773	
Princ. bought @ 100-1867			
sold @ 144.....		11,131	
Total Princ. & Div. @ 5%	1869		11,904

POSSIBILITIES OF PROFIT

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Comp. Int. @ 4% 4 yrs.		
Princ. & Int.	1873	\$13,926
Invested @ 75 in 1873.		
Dividends 1 yr. @ 5% to ..	1874	\$928
Princ. bought @ 75 in 1873		
sold @ 100.	1874	18,560
Total of Princ. & Dividends		
@ 5% to 1874.		19,488
Comp. Int. @ 4% 3½ yrs.		
Princ. & Int.	1877	22,360
Invested @ 55 in 1877.		
Dividends 4 yrs. @ 5% to	1881	8,130
Princ. bought @ 55 in 1877		
sold @ 134.	1881	54,471
Total Princ. & Dividends		
@ 5% 1881.		62,601
Comp. Int. @ 4% 3½ yrs.		
(June) 1881.		
Princ. & Int. to Jan.	1885	71,825
Invested @ 86 in 1885.		
Dividends 4 yrs. 9 mos. @		
5% to Sept.	1889	19,836
Princ. bought @ 86-1885		
sold @ 136.	1889	113,587
Total of Princ. & Div. @		
5%.	1889	133,423
Comp. Int. @ 4% 1 yr. 10		
mos. to July 31, 1891.		
Princ. & Int.	1891	143,385
Invested @ 115 in 1891.		
Dividends 1 yr. @ 5% to ..	1892	6,235
Princ. bought @ 115 in		
1891 sold @ 135 in.	1892	168,345
Total of Princ. & Div. @		
5%.	1892	174,580
Comp. Int. @ 4% 4 yrs. ..		
Princ. & Int. to.	1896	204,234
Invested @ 100 in 1896.		
Dividends 6 yrs. @ 5% to	1902	61,269
Princ. bought @ 100 in		
1896 sold @ 190.	1902	388,037
Total Princ. & Dividends		
@ 5%.	1902	449,306
Comp. Int. @ 4% 1 yr.		
Princ. & Int. to Oct.	1903	467,278
Invested @ 146 in 1903.		
Dividends 2 yrs. 3 mos. @		
5% to.	1906	36,005

Princ. bought @ 146 in 1903 sold @ 205 during Jan.....	1906	\$656,102	
Total of Princ.&Div.@ 5% Comp. Int. @ 4% 1 yr. 9 mos. to Nov. 1907.....	1906		\$692,107
Princ. & Int..... Invested @ 119 in 1907... Divs. 1 yr. 8 mos. @ 5% to Aug.....	1907		741,384
Princ. bought @ 119 in 1907 sold @ 190 in Aug.. Total Princ. & Divs. @ 5% through Aug.....	1909	51,916	
Comp. Int. @ 4% 5yrs. 3 mos. to Dec.....	1909	1,183,719	
Princ. & Int..... Invested @ 128.3 in Dec.. Divs. 1 yr. @ 5% to Jan.. Princ. bought @ 128.3 in 1914 sold @ 146.6 in Jan.. Total Princ. & Div. @ 5% through Jan.....	1914		1,235,635
Comp. Int. @ 4% 11 mos. to Dec.....	1914		1,518,372
Princ. & Int. in Dec..... Invested @ 90 in Dec.... Divs. 2 yrs. 6 mos. @ 5% to June.....	1916	59,172	
	1916	1,734,937	
	1916		1,794,110
	1917	65,780	
	1917		1,869,890
	1917		
	1920	353,181	

In the foregoing table 5% is allowed as an average dividend on the stocks held and 4% an average interest on bank deposits or the highest grade commercial paper. The average prices at which the purchases and sales are executed are the "averages" at the beginning of each of the paragraphs above on general stock prices.

The preceding example shows that \$2,500 conservatively invested in a few standard stocks about fifty years ago would today amount to over \$1,000,000. These are not only strictly investment stocks, but are also stocks which have fluctuated comparatively little in price. This, moreover, was possible by giving orders to buy or sell only once in every three or four years.

If other stocks which were not dividend payers and which have shown greater fluctuations were purchased, and advantage had been taken of the intermediate fluctuations, the \$2,500 would have amounted to much larger figures. By intermediate movements is not meant the weekly movements which the ordinary professional operator notes, but the broader movements extending over many months and possibly a year or more. Nevertheless, these broader *intermediate* movements should not be noticed by a conservative investor, as it is possible to *correctly diagnose* only the movements extending over longer periods. Many brokers believe that it is possible to discern also these intermediate movements of six or eight months; and if so, the following results would have been possible.

\$5,000 invested in "St. Paul" in 1870 would amount to over \$10,000,000 today.

\$5,000 invested in "Union Pacific" in 1870 would amount to over \$15,000,000 today.

\$5,000 invested in "Central of New Jersey" would amount to over \$30,000,000 today.

\$5,000 invested in "Northern Pacific" would amount to over \$50,000,000 today.

These figures are not based on the supposition that the investor was selling at the top of every rise or buying at the bottom of every decline, but that the transactions were made at average "high" and average "low" prices based upon the study of technical conditions.

If, however, the investor can increase an investment of \$2,500 to \$1,500,000 in about fifty years without taking any risk he should be satisfied, and should not for the sake of obtaining greater profits assume any additional risks. With this serving as a simple illustration of how money can be made by studying statistics, the following (from a letter written by the manager of a Stock Exchange House) is of interest as an illustration of the other side:

"Hearing on every hand about the fortunes made in Wall Street, I decided, upon being graduated from college, to devote myself to finance. With this end in view, I secured a position with a first-class New York Stock Exchange House, finally becoming the 'handshaker' for the firm—that is, 'manager' of the customers' room. So I had an exceptional opportunity to size up the stock busi-

ness. The chief duties of the manager are to meet customers when they visit the office, tell them how the market is acting, the latest news from the newstickers and the gossip of the Street. But the real duties are to get business for the house. Once a most peculiar man came to the office. He was about forty-five years of age, dressed in a faded cutaway coat, high-water trousers, and an East Side, low-crown derby hat. In a high, squeaky voice he said that he knew our Milwaukee house and would like to open an account. Of course, we were all smiles, for here was a new 'customer.'

"One day while in Boston he called us up on the long-distance telephone to make an inquiry about the grain market. One of my assistants, desiring to get a commission out of him, said, 'We hear that Southern Pacific is going up; you had better get aboard.' He answered, 'All right; buy me a hundred at the market.' The stock was bought, but he never saw daylight on his purchase, for the market declined steadily afterward, and by the time he got back from Boston it showed a heavy loss. The man who had advised its purchase had no special knowledge about the stock, but simply took a chance, knowing that the market had only two ways to go, and it 'might' go up, in which case, besides making twenty-five dollars in commissions for the house, he would be patted on the back for his good judgment. If the market went down, as it did, he would still make twenty-five dollars.

"I venture to say that 99% of the specu-

lations on the New York Stock Exchange are based on such so-called 'tips.' The manager has got to get the business to keep his position and salary, and this can only be done by 'touting' people into the market. So he draws on the 'dope' sheets of the professional tipsters and his own feelings, and gives positive information to the bleating lamb that the Standard Oil is putting up St. Paul, or that certain influential bankers are 'bulling' Union Pacific. The lamb buys the stock, the broker gets the commission, and then the lamb worries his heart out as he sees his one-thousand-dollar margin jumping around in value. Now it has increased to eleven hundred dollars, then declined to nine hundred and fifty dollars, then nine hundred dollars, eight hundred dollars, and then back to eight hundred and fifty dollars, and then it takes the 'toboggan' to three hundred dollars, upon which the broker calls for margins, and sells the customer out if they are not forthcoming, the whole speculation being based on the manager's 'feeling' that stocks ought to go up.

"Men of affairs who will not play poker at home, and are shocked at the mention of faro and roulette, which any old-timer will tell you are easier to beat than the stock market, think they are using business judgment when they try to make money on stock market 'tips.' Anyone with common sense can see that a 10% margin has no more chance in an active market than a brush dam in a Johnstown flood. One of the causes for this kind of speculating on a margin is that a broker's commission is only $12\frac{1}{2}$

cents per share, and it does not pay to do small-lot business. The one-thousand-dollar margin would only buy ten shares outright and net the broker but \$1.25 for buying and \$1.25 for selling, whereas that same amount as margin on one hundred shares yields the broker \$12.50 each way, besides interest on the balance, the net result being that for any given amount of money a speculator on 10% margin multiplies his profits by ten and his losses by ten over those that would occur were he to buy the stock outright and take it home. The broker on his side multiplies his commission by ten over what he would receive were he to do an investment business."

For further proofs as to the foolhardiness of the average so-called "investor" in stocks, see the series of articles in *Everybody's Magazine* that appeared during the spring of 1909. Such a method of buying and selling stock is absolutely unreliable; and unless men are willing to spend money for fundamental statistics, they should purchase no listed securities, but confine their purchases to inactive bonds recommended by high-grade bond houses. On the other hand, it is possible to create a fortune by the method that is herein outlined, although it is practically the only method which can be depended upon. It is also the most profitable, as all other methods come under the head of "accumulation by *arithmetical* progression" rather than "accumulation by *geometrical* progression."

In order to increase an investment of \$5,000 to \$1,000,000 in thirty years by any other method,

a man must accumulate about \$25,000 a year, or \$100,000 continually *every* four years, *without a break*. This is almost an impossibility so far as the *average* man is concerned and the feat is simply made greater or less in direct proportion to the amount. That is, to build up a fortune of \$200,000 requires a laying aside of several thousand dollars every year in addition to allowing all interest to accumulate; while to create a fortune of several millions requires that one should make, exclusively in his business, more money each year than almost any one man in the entire world (*who holds no stocks or bonds*) is making in his business.

This can best be illustrated as follows:—If one has \$1,000 invested in only ten shares of stock, it does not seem very wonderful for it to double in value in three or four years, enabling its sale for \$2,000, which is at a profit of \$1,000. This is due to the fact that one is accustomed to the thought of handling \$1,000; yet with \$100,000 in the same stock, it would just as surely become \$200,000, giving a profit of \$100,000.

In other words, at the beginning there is little difference between “Arithmetical” and “Geometrical” Progression, as \$1,000 *added* to \$1,000 amounts to \$2,000, the same as if multiplied by two. After accumulating \$100,000, however, it makes a tremendous difference whether one adds \$1,000, making the amount \$101,000, or multiplies said amount by two, making the amount \$200,000. It

is for this reason that it is not only possible to create a great fortune through conservative investments, *but this is the safest way it can be accomplished.*

The Possibilities of Profits in Bonds

For the benefit of readers who confine their purchases strictly to bonds, the following tables will be found of great interest. Although bonds do not present nearly as great an opportunity for profit as stocks, yet it will be seen that there is often an opportunity of obtaining an average profit of from 10% to 20% in addition to the interest received.

From every point of view a study of these tables clearly shows that the study of fundamental statistics is of great value even to the banker or investor who purchases only bonds. If he buys with the idea of selling again, a study of fundamental statistics is absolutely essential. If one buys for permanent investment only, the study is not essential; but by showing a purchaser when to buy, fundamental statistics will save him *an average of about 12% on all purchases.* In order that the reader may not think that these tables were prepared by us merely in the interests of the study of fundamental statistics we take pleasure in stating that they were prepared by a leading New York investment house, whose natural object would be to show that bonds fluctuate very little. It, however, will be seen that bonds have their normal price line as well as stocks. Every abnormal action away from this line, is followed by an equal reaction on the other side.

PANIC OF 1884 COMPARATIVE PRICES OF BONDS 1884

	Low June	High December	Rise from Low	High 1885	Rise from June 1884
Burl., Cedar Rap. & Nor. 1st 5s	95½	102	6½	109½	14½
Chesapeake & Ohio 6s (Ser. A)	83	105	22	110	27
Can. Southern 1st 5s	92	99	7	109	17
Chi., Burl. & Quincy, Iowa Div., 4s	89	93½	4½	99½	10½
Chi., Mil. & St. Paul, Hastings & Dak. Div., 7s	116	120½	4½	127	11
Chi. & Northwestern Deb. 5s	90½	96	5½	106	15½
Del. & Hud., Penn. Div., 7s	125½	132	6½	137½	12½
N. Y., Lack. & West. 1st 6s	115	120	5	128	13
Hannibal & St. Jo. Consol. 6s	110	115	5	119	9
Metropolitan Elevated 6s	98	110½	12½	118	20
Nash., Chat. & St. Louis 7s	113	120½	7½	126½	13½
New York Central 7s	127	133	6	138½	11½
Northern Pacific General 6s	98	103½	5½	115	17
Missouri Pacific Consol. 6s	90½	97½	7	108	17½
Rome, Wat. & Ogdensburg 5s	64	74	10	90	26
St. Louis, Iron Mt. & So. Consol. 5s	53	73	20	91	38

Average Rise..... 17½

In the panic of 1884 the storm burst in all its violence on May 14th, and the financial depression following reached its depth on the last day of June. The first of July was the great turning point. The year 1885 was one of remarkable recovery. It will be seen from the above table that the average rise of sixteen active bonds from the low in June to the high in December, 1884, was 8½%, while the average rise from the low in June, 1884, to the highest prices touched by the same bonds during the year 1885 was 17½%.

PANIC OF 1893 1893

	Low August	High December	Rise from Low	High 1894	Rise from Aug. 1893
Canada Southern 1st 5s	99	109½	10½	114	15
Cent. of N. J. 5s	102	114½	12½	117½	16½
Chesapeake & Ohio Consol. 5s	90	103½	13½	110	20
Chesapeake & Ohio General 4½s	61½	78	16½	78½	16½
Chi., Burl. & Quincy, Nebraska 4s	79½	87½	8	92½	13
Chi., Mil. & St. Paul General 4s	86	93	7	91½	5½
C. C. & St. Louis, St. L. Div. 4s	89	91	2	92	3
East Tenn., Va. & Ga. Consol. 5s	83	92	9	107	14
Louisville & Nash. Unif. 4s	75	78½	3½	79½	4½
Metropolitan Elevated 6s	112½	114½	2½	122	9½
Mo., Kan. & Tex. 1st 4s	69	82½	13½	83½	14½
Mo. Pac., Pac. of Mo. Ext. 4s	93	98	5	103½	10½
N. Y., Chic. & St. Louis 1st 4s	89½	98	8½	102½	13½
Pennsylvania Co. 4½s	104½	110	5½	113½	8½
Rio Grande Western 1st 4s	54	74	20	71½	17½
St. Louis, Iron Mt. & So. Consol. 5s	60	79½	19½	103½	43½
St. Louis Southwestern 1st 4s	50	61½	11½	62½	12½
Wabash 1st 5s	93	103½	10½	107½	14½
West Shore 1st 4s	93½	104½	10½	106½	13½
Average Rise.....					13½

aJuly: sales in August, 1893.

The panic of 1893 was one of extreme severity, being followed by an industrial depression extending over about three years. The average rise of nineteen active bonds from the low in August to the high in December, 1893, was about 9.93%, while the average rise from the low in August, 1893, to the highest points touched by the same bonds during the year 1894 was about 13½%.

PANIC OF 1903 1903

	Low	High	Rise from Low		High 1904	Rise from Aug. 1903
Balto. & Ohio, Prior Lien, 3½s	91½	96	4½	Nov.	96½	5½
Balto. & Ohio, Southwestern, 3½s	86½	89½	3½	Dec.	94	7½
Canada Southern 1st 5s	102½	105½	3½	June	106	3½
Central of New Jersey 5s	126½	131	4½	Dec.	136½	10½
Chi. & Alton Ry. 3½s	70½	76½	5½	Dec.	82½	12½
Chi., Burl. & Quincy, Ill. Div., 3½s	89½	94½	5½	Dec.	97½	7½
Chi., Burl. & Quincy, Nebraska, 4s	102½	105½	3½	Oct.	107	4½
Chi., Burl. & Quincy Joint 4s	87½	93½	6½	Dec.	101½	13½
Chi. & Eastern Ill. Consol. 5s	113½	115½	1½	Sept.	120	6½
Chi. Mil. & St. Paul General 4s	103	111	8	Dec.	112	9
Chi. & Northwestern General 3½s	95½	99½	3½	Sept.	100½	4½
Chi., Rock Island & Pacific General 4s	99½	104	4½	Dec.	106½	6½
Denver & Rio Grande 1st 4s	97½	100	2½	Dec.	102½	5
Kansas City Southern 3s	65½	70½	5	Aug.	73½	7½
Louisville & Nashville Unified 4s	97½	100½	3½	Dec.	104½	7½
New York Central 3½s	95	100	5	Dec.	101½	6½
Northern Pacific 1st 4s	99½	103	3½	Dec.	106	6½
Reading General 4s	94	97½	3½	Dec.	103½	9½
Rio Grande Western 1st 4s	94	97	3	July	101	7
St. Louis & San Francisco Ref'd 4s	78½	85½	6½	Dec.	91	12½
St. Louis Southwestern Consol. 4s	66	71½	5½	Nov.	83	17
Southern Railway Consol. 5s	111½	114½	3½	Dec.	121	9½

PANIC OF 1903—Continued

1903

	Low	High	Rise from Low	High 1904	Rise from Aug. 1903
Union Pacific 1st 4s	99½	103½	4½	107½	8½
Wisconsin Central 1st 4s	87	91½	4½	93	6
Average Rise.....					8.06

The year 1903 was not marked by a financial panic, strictly speaking, although developments on the New York Stock Exchange under the great shrinkage of values there recorded were at times closely suggestive of panicky conditions. Nor did the country have to go through the throes of a great commercial convulsion, although there was necessarily some hesitation and decline in general business. Industrial and financial affairs during 1904 were again on the up-grade. The average rise of the twenty-four active bonds given in the above table from the low in August to the high in December, 1903, was 4.33%, while the average rise from the low in August, 1903, to the highest prices touched by the same bonds during the year 1904 was 8.05%. It will be observed that the decline in bond quotations during 1903 was not nearly so great as the decline in either 1884, 1893, or 1907.

PANIC OF 1907

	Low 1907	Fall from High 1906	High 1906-1907	Rise from Low 1907
Atchison, Topeka & Santa Fe General 4s	89½	15	104½	12½
Baltimore & Ohio 1st 4s	88	17½	105½	13½
Baltimore & Southwestern 3½s	80	13	93	11½
Central of Georgia Consol. 5s	85	29½	114½	26½
Central of New Jersey General 5s	113	19	132	16
Chesapeake & Ohio Consol. 5s	101	18½	119½	12½
Chesapeake & Ohio General 4½s	87	22	109	19½
Chicago & Alton Ref'd 3s	58	24½	82½	22
Chi., Burl. & Quincy, Ill. Div., 3½s	82½	12½	95½	10½
Chi., Rock Island & Pacific General 4s	88	15½	103½	13½
Chi., Rock Island & Pacific Ref'd 4s	80	17	97	14
Chi., Rock Island & Pacific R.R. 4s, 2002	49½	31½	81½	32½
Colorado & Southern 1st 4s	75	21½	96½	24
Delaware & Hudson Conv. 4s	88	24½	112½	19½
Errie 1st Consol. Prior 4s	84½	17½	102	6½
Illinois Central Gold 3½s	91½	8½	100	2½
Kansas City, Ft. Scott & Memphis Ref'd 4s	61	26½	87½	25
Lake Shore Deb. 4s 1931	83	17	100	11
Louisville & Nashville Unified 4s	92	12½	104½	10½
Mo., Kan. & Tex. 1st 4s	89½	13½	103½	11½
Mo., Pacific Coll. 5s	89½	19	108½	14½
New York Central 3½s	85	14½	99½	9½
Norfolk & Western Div. & General 4s	81½	18	99½	13½
Northern Pacific 1st 4s	93½	12½	106½	10½
Pennsylvania Conv. 3½s 1915	83½	17½	101	16½

PANIC OF 1907—Continued

	High 1903-1906	Low 1907	Fall from High 1906	High 1909	Rise from Low 1907
Reading Co. General 4s	102½	86½	16½	101	14½
Rio Grande Western 1st 4s	100	81	19	100½	19½
St. Louis & San Francisco Ref'd 4s	88	66½	21½	89	22½
Southern Pacific Ref'd 4s	97½	82	15½	98½	16½
Southern Railway Consol. 1st 5s	119½	90	29½	113½	23½
Union Pacific 1st 4s	106½	92½	14½	104½	12½
Wabash 1st 5s	119	99½	19½	114½	14½
Wabash, Pittsburgh Term. 1st 4s	90½	58	32½	55½	-2½
Western Maryland 1st 4s	88½	59½	28½	88	28½
West Shore 1st 4s	109	94	15	104	10
Average Rise.....					15.38

From these tables it will be seen that there is an average fluctuation of about 15% every five or six years, or about 3% for each year. As these bonds yield about 5% when purchased during panics, this makes a total average yield of about 8%. Now, \$5,000 at 8% compound interest becomes over \$68,000 in about 40 years, and \$10,000 becomes about \$50,000 in only about 20 years. This shows how rapidly money can be multiplied by the use of fundamental statistics, even though one confines one's investments to the highest grade bonds.

As some readers will say, "These figures are all very well, but one might have bought some securities which defaulted." The following tables, prepared by Mr. J. D. Evans and which appeared in one of the many valuable financial articles published by the Van Norden Magazine, are extremely instructive. Of course, one may invest in new schemes and lose all the money invested; but if one will confine his investments to securities of established railroads, he has nothing to fear from reorganizations. The Law of Equal and Opposite Reaction will protect him.

Without any noteworthy exceptions the reorganizations have been carried out with the intention of placing the companies in a position of solidity and strength with respect to their fixed obligations, on the low basis of business as it existed at that time. To accomplish this the stockholders and owners of the junior securities of the bankrupt companies were induced to forego a large part of their immediate income from their investments and take their chances of larger returns with the growth of the companies. With the object of making these chances as bright as possible the reorganization committees were almost invariably quite liberal to the holders of such obligations in their allotment of new securities, especially to such of the old holders as paid the assessments necessary to provide the new capital required.

In the tables presented no attempt is made to include all possible obligations of all reorganized companies. No one would be justified in pre-

tending that absolutely exact general conclusions can be arrived at from any statistical tables made up in a study of reorganizations, since no two bonds issued under different indentures are exactly alike. Therefore, only a few typical representatives of the various kinds of bond issues affected by reorganizations are grouped together in the main table and these are then segregated into smaller groups including securities as nearly in the same class as possible. Such general conclusions, arrived at as a result of such a plan, are, however, more valuable than they would be in the other case, inasmuch as typical securities of typical companies have been taken, representing all parts of the country. Says Mr. Evans:

"The conservative investor who makes it a practice to buy only the best class of first mortgage bonds with the purpose of insuring the safety of his principal and the continuity of his income, needs only the most casual acquaintance with the outcome of reorganizations to convince him that he has plenty of proof that his stand is a wise one. By far the larger proportion of first lien bonds were not disturbed at all either in their lien or rate of interest. In reality their position was greatly strengthened by the financial readjustment and the accretion of fresh capital to assure the continuance and success of the company on whose property they had a prior lien. The fact that there are still outstanding a considerable number of old underlying bonds of reorganized companies selling at premiums ranging from 10% to 30% or 40% is the best evidence of this."

TABLE A — STOCKS AFFECTED BY REORGANIZATION

	Old Stock Surrendered	Assessment	1st Pfd. Stk. Rec'd	2nd Pfd. Stk. Rec'd	Com. Stk. Rec'd
Phila. & Reading,	One Class.....	20 %	none	none	100 %
Baltimore & Ohio,	First Preferred.....	2 %	52 1/2 %	.....	75 %
"	Second Preferred.....	20 %	20 %	.....	150 %
"	Common.....	20 %	20 %	.....	100 %
Norfolk & Western,	Preferred.....	12 1/2 %	none	.....	112 1/2 %
"	Common.....	12 1/2 %	.....	.....	75 %
Union Pacific,	One Class.....	15 %	15 %	.....	100 %
Northern Pacific,	Preferred.....	15 %	50 %	.....	50 %
"	Common.....	15 %	none	.....	100 %
Atch., Top. & San. Fe,	One Class.....	10 %	10 %	.....	100 %
Rocky Mtn. P.,	Preferred.....	18 %	.....	100 %	none
(N. Y., L. E. & W.)	Common.....	12 %	none	none	100 %
Averages.....	13.1 %	14 %	8 1/2 %	.....	88 1/2 %
	Total Per Cent of Stocks.....	14 %	.....	.....	110 1/2 %
	Per Cent of Old Principal and Assessment.....	.....	.....	.....	98 %

TABLE A — BONDS AFFECTED BY REORGANIZATION

	Old Bonds Surrendered	Rate	Assess't	New Bonds Rec'd	Rate	1st Pfd. Stock Rec'd	2nd Pfd. Stock Rec'd	Com. Stock Rec'd
Union Pacific,	First Mortgage.....	6 %	none	100 %	4 %	50 %	.....	none
"	Kansas Div. First Mortgage.....	6 %	none	100 %	4 %	50 %	.....	none
"	Kansas Div. Consol.....	6 %	none	50 %	4 %	110 %	.....	none
"	Kansas Div. Incomes.....	7 %	none	80 %	4 %	50 %	.....	none
Northern Pacific,	Sinking Fund.....	8 %	none	75 %	4 %	100 %	.....	none
"	General First Mortgage.....	6 %	none	135 %	4 %	none	.....	none
"	General Second Mortgage.....	6 %	none	100 %	3 %	50 %	.....	none
"	General Third Mortgage.....	6 %	none	100 %	3 %	62 1/2 %	.....	none
"	Consolidated Mortgage.....	5 %	none	50 %	3 %	50 %	.....	none
"	N. P. & Mon. First Mortgage.....	6 %	none	50 %	3 %	50 %	.....	none
"	James Riv. Val. First Mortgage.....	6 %	none	50 %	3 %	50 %	.....	none
"	Collateral Trust Notes.....	6 %	none	100 %	4 %	20 %	.....	none

TABLE A — BONDS AFFECTED BY REORGANIZATION — Continued

	Old Bonds Surrendered	Rate	Assess't	New Bonds Rec'd	Rate	1st Pfd. Stock Rec'd	2nd. Pfd. Stock Rec'd	Com. Stock Rec'd
Atch., Top. & San. Fe.	General (First) Mortgage.....	4 %	none	{ 75 % *32 % }	{ 4 % 4 % }	none	....	none
"	Second Mortgage, Class A.....	4 %	4 %	none	....	105 %	....	none
"	Second Mortgage, Class B.....	4 %	4 %	none	....	110 %	....	none
Baltimore & Ohio,	Loan of 1853 (First Mortgage).....	4 %	none	{ 102 1/2 % 121 1/2 % }	{ 3 1/2 % 4 % }	14 %	....	none
"	Loan of 1874 (First Mortgage).....	6 %	none	{ 112 % 12 % }	{ 3 1/2 % 4 % }	16 %	....	none
"	Pitts. & Con'lv. 1st Ext'd Mortgage	4 %	none	{ 102 1/2 % 121 1/2 % }	{ 3 1/2 % 4 % }	4 %	....	none
"	Phila. Div. First Mortgage.....	4 1/2 %	none	100 %	4 %	26 1/2 %	....	none
"	Terminal.....	4 1/2 %	none	100 %	4 %	none	....	none
"	Consolidated Mortgage.....	5 %	none	{ 105 % 12 1/2 % }	{ 3 1/2 % 4 % }	8 1/2 %	....	none
Erie, (N. Y., L. E. & W.),	Reorganization First Lien.....	6 %	none	100 %	4 %	none	none	none
"	Second Consol. Mortgage.....	6 %	none	75 %	4 %	55 %	none	none
Norfolk & Western,	Collateral Trust.....	6 %	none	110 %	4 %	none	none	none
"	Md. & W. Div. First Mortgage.....	5 %	none	70 %	4 %	62 1/2 %	....	none
"	Chinch V. Div. First Mortgage.....	5 %	none	50 %	4 %	70 %	....	none
"	Adjustment Mortgage.....	7 %	none	125 %	4 %	18 %	....	none
"	100 Years Mortgage.....	5 %	none	60 %	4 %	72 1/2 %	....	none
"	Debentures 1892.....	5 %	none	none	....	100 %	....	none
"	Equipment Mortgage.....	5 %	none	100 %	4 %	48 %	....	none
Phila. & Reading,	General Mortgage.....	4 1/2 %	none	100 %	4 %	none	....	none
"	First Income.....	5 %	20 %	none	....	30 %	100 %	none
"	Second Income.....	5 %	20 %	none	....	none	65 %	55 %
"	Third Income.....	5 %	20 %	none	....	none	35 %	85 %
†Chesapeake & Ohio,	First Mortgage, Series B.....	6 %	none	{ 166 1/2 % 122 1/2 % }	{ 5 % 4 1/2 % }	....	....	11 %
"	Second Mortgage Currency.....	6 %	none	133 1/2 %	4 1/2 %	....	....	66 1/2 %

*Second Mortgage Bond.
†The 1st and 2nd Pfd. stocks of new C. & O. Co. were later exchanged for bonds, and final results were as indicated in table.

TABLE A — BONDS AFFECTED BY REORGANIZATION — Continued

	Old Bonds Surrendered	Rate	Assess't	New Bonds Rec'd	Rate	1st Pfd. Stock Rec'd	2nd Pfd. Stock Rec'd	Com. Stock Rec'd
M., Kan. & T. U. P. R.R., So. Branch	First and other First Mortgages on portions of main system were paid off in full including the First Consolidated 7% Mortgage.							declared to be due and were
"	"	General Consol. Mortgage.....	6 %	none		27½ %	....	none
"	"	General Consol. Mortgage.....	5 %	none		20 %	....	none
St. Louis S. W.,	St. L., Ark. & Tex. First Mgtge.....	6 %	none	100 %	4 %	20 %	....	none
St. Louis & San Francisco,	St. L., Sal. & Ark. First Mgtge.....	5 %	none	50 %	4 %	none	40 %	80 %
"	Kan. City & S. W., First Mgtge.....	6 %	none	65 %	4 %	none	40 %	60 %

*Second Mortgage Bond.

TABLE B — BONDS OF FIRST CLASS

Bonds either entirely or predominantly *first* lien on main properties

	Old Bonds Surrendered	Old Rate of Return	New Principal Received in Bonds	New Principal Received in Stock	Immediate Return on Former Principal	Subsequent Return on Former Principal
Union Pacific,	First Mortgage.....	6 %	100 %	50 %	6.00 %	6.00 %
"	Kansas Division, First Mortgage.....	6 %	100 %	50 %	6.00 %	6.00 %
Northern Pacific,	General First Mortgage.....	6 %	135 %	none	5.40 %	5.40 %
Atch., Top. & San. Fe.,	General (First) Mortgage.....	4 %	107 %	none	4.28 %	4.28 %
Baltimore & Ohio,	Loan of 1853 (First Mortgage).....	4 %	115 %	14 %	4.55 %	4.55 %
"	Loan of 1874 (First Mortgage).....	6 %	124 %	16 %	5.04 %	5.04 %
"	Pitts. & Connelsv. (First Ex. Mortgage)...	4 %	115 %	4 %	4.34 %	4.34 %
"	Phila. Division (First Mortgage).....	4½ %	100 %	62½ %	5.06 %	5.06 %
Norfolk & Western,	Maryland & Wash. First Mortgage.....	6 %	70 %	20 %	5.30 %	5.30 %
St. Louis S. W.,	St. L., Ark. & Tex. First Mortgage.....	5.1 %	125 %	24.3 %	4.00 %	5.00 %
Averages.....			109.1 %		4.997 %	5.097 %

TABLE C—BONDS OF SECOND CLASS

Bonds constituting practically *second* liens on main properties

	Old Bonds Surrendered		Old Rate of Return	New Principal Received in Bonds	New Principal Received in Stock	Immediate Return on		Subsequent Return on	
						Former Principal	Former Principal	Former Principal	Former Principal
Union Pacific,	Kansas Division, Consol. Mortgage.....	6 %	50 %	110 %	6.40%	6.40%			
Northern Pacific,	General Second Mortgage.....	6 %	100 %	50 %	6.00%	6.00%			
Atch., Top. & San. Fe.,	Second Mortgage, Class A and B.....	4 %	none	103 %	none	5.15%			
Baltimore & Ohio,	Consolidated Mortgage.....	5 %	117 1/2 %	84 %	4.52%	4.52%			
Chesapeake & Ohio,	First Mortgage, Series B.....	6 %	89 %	11 %	4.35%	4.45%			
Averages.....	.....	5.40%	71.30%	56.50%	4.25%	5.30%			

TABLE D—BONDS OF THIRD CLASS

Bonds constituting practically *third* liens on main properties

	Surrendered	Old Rate of Return	New Principal Received in Bonds	New Principal Received in Stock	Immediate Return on Former Principal	Subsequent Return on Former Principal
Union Pacific,						
Sinking Fund,		8 %	75 %	100 %	7.00%	7.00%
Kansas Division,		7 1/2 %	80 %	50 %	5.20%	5.20%
Northern Pacific,		7 %	100 %	50 %	5.00%	5.00%
Norfolk & Western,		6 1/2 %	125 %	18 %	5.72%	5.72%
Adjustment Mortgage,		4 %	100 %	none	4.00%	4.00%
Phila. & Reading,		6 %	33 1/3 %	66 2/3 %	1.50%	2.16%
Second Mortgage Currency,		6 %	27 1/2 %	72 1/2 %	4.76%	5.86%
Chesapeake & Ohio,		6 2/3 %	90.33 %	44.43 %	4.74%	4.9 %
Mov., Kan. & Texas,						
Averages,						

TABLE E — BONDS OF FOURTH CLASS

Bonds constituting practically *fourth* or *fifth* liens on main property

	Old Bonds Surrendered	Old Rate of Return	New Principal Received in Bonds	New Principal Received in Stock	Immediate Return on		Subsequent Return on	
					Former Principal	Principal	Former Principal	Principal
Northern Pacific,								
Erie,	Consolidated Mortgage.....	5 %	50 %	62½ %	4.00%		4.00%	
(N. Y. L. E. & W.),	Reorg. First Lien.....	6 %	100 %	none	4.00%		4.00%	
Norfolk & Western,	Second Consol. Mortgage.....	6 %	75 %	55 %	3.00%		5.20%	
Phila. & Reading,	100 Year Mortgage.....	5 %	60 %	72½ %	5.30%		5.30%	
"	First Income.....	16 %	none	130 %	0.00%		5.20%	
"	Second Income.....	16 %	none	120½ %	0.00%		4.20%	
"	Third Income.....	16 %	none	120 %	0.00%		4.80%	
Averages.....		5.71%	40.71%	80 %	2.33%		4.76%	

†Including 20% assessment.

TABLE F — LOWER GRADE DIVISIONAL OR BRANCH LINE BONDS

	Old Bonds Surrendered	Old Rate of Return	New Principal Received in Bonds	New Principal Received in Stock	Immediate Return on		Subsequent Return on	
					Former Principal	Principal	Former Principal	Principal
Northern Pacific,								
Norfolk & Western,	N. Pac. & Mont. First Mortgage.....	6 %	50%	50%	3.50%		3.50%	
St. Louis & San Fran.,	James River Valley First Mortgage.....	6 %	50%	50%	3.50%		3.50%	
"	Clinch Val. Div. First Mortgage.....	5 %	50%	70%	4.80%		4.80%	
"	St. L., Salem & Ark. First Mortgage.....	5 %	50%	100%	2.00%		13.60%	
"	Kan. City & So. W. First Mortgage.....	6 %	65%	100%	2.60%		14.20%	
Averages.....		5.6%	53%	74%	3.28%		3.92%	

†The dividends on St. L. & San Fran. second preferred stock have not been continuous.

TABLE G—MISCELLANEOUS BONDS, DEBENTURES, EQUIPMENTS, COLLATERAL, ETC.

	Old Rate of Return	New Principal Received in Bonds	New Principal Received in Stock	Immediate Return on Former Principal	Subsequent Return on Principal
Old Bonds Surrendered					
Collateral Tr. Notes.....	6 %	100%	20%	4.80%	4.80%
Terminal.....	4½%	100%	none	4.00%	4.00%
N. Y., L. E. & W., Collateral Tr.....	6 %	110%	none	4.40%	4.40%
Debentures 1892.....	5 %	none	100%	4.00%	4.00%
Equipment Mortgage.....	5 %	100%	48%	5.92%	5.92%

TABLE H—SUPPLEMENTARY TABLE—STOCKS—ALL CLASSES

	New Principal Received in Stock for Old Principal and Assessment	Immediate Return on Old Principal and Assessment	Subsequent Return on Old Principal and Assessment
Old Stock Surrendered			
One Class.....	100.0%	0.52%	9.21%
Preferred.....	90.9%	1.82%	5.00%
Common.....	86.9%	none	6.08%
One Class.....	100.0%	none	4.10%
First Preferred.....	125.0%	2.05%	6.47%
Second Preferred.....	141.6%	0.66%	8.17%
Common.....	100.0%	0.66%	5.66%
Preferred.....	92.6%	none	3.70%
Common.....	89.3%	none	none
Preferred.....	100.0%	none	4.00%
Common.....	66.7%	none	2.67%
One Class.....	83.3%	none	3.33%
Averages.....	98.0%	0.476%	4.866%

Union Pacific,
Northern Pacific,
Atch., Top. & San. Fe,
Baltimore & Ohio,
" "
Erie, N. Y., L. E., & W.,
Norfolk & Western,
Phila. & Reading.

"There were a few prior mortgage bonds which had their interest rate reduced while otherwise undisturbed, but the best grade bonds that were disturbed fared approximately as indicated in Table B. As shown in Table B, the principal on the old first mortgage bonds disturbed was not only conserved but increased an average of 33.3% as compensation for a reduction in the return on each dollar. This in itself has been a decided advantage inasmuch as the old mortgages, if they had been left to mature, would, at maturity, be redeemed at par or extended on a basis of 4% or less, whereas the average holder of old disturbed firsts, now has well secured principal greater by 33.3%, the whole probably yielding him a 4% rate.

"This outcome places him on a level with the holder of an undisturbed first mortgage having a high rate of interest and a long period to run which on account of the subsequent enhancement of the credit of the company commands a price of 133.3%. The table also shows that the average reduction in immediate return on the bonds included was very slight, being only from an average return of 5.1% to 4.997%. The rate later increased to 5.097% and with a fair prospect that later it might attain to an appreciably higher figure.

"Thus the buyer of the first mortgages found himself more than justified in his practice, in that the average holder, instead of merely conserving his principal, received a new principal 133.3% of the

old, and although the return was cut down at first, the cut was very slight, and after a comparatively few years, the return was restored to about the original rate with every reasonable prospect of eventually becoming greater.

"Of the second, third or fourth grade bonds secured on main properties or low grade divisional and branch line bonds, which follow in their respective tables, each class received a correspondingly severe cut in both their immediate and prospective return. Some typical miscellaneous bonds fared as shown in Table G.

"It might be laid down as a general rule that Equipment Trust mortgages were always favorably treated. The treatment of Collateral Trust bonds, of course, varied materially, depending on the quality of the collateral pledged. Yet, it is interesting to observe, in view of the recent adverse discussion of bonds secured by pledge of collateral, that the great majority of bonds of that class were either paid off at par and all accrued interest either by the new company directly, or as a result of the liquidation of the pledged collateral, or were given new securities to full amount of principal, the income from which represented a reduction of only a small proportion of the old income."

That this was the case was nothing short of remarkable considering the depression in the prices of all securities at that time and the difficulty of obtaining any market for even the best of bonds or stocks. Here again we see the workings of the inevitable Law of Equal Reaction. If we err, we

cannot avoid the consequences. If we do right, we are sure to profit by it.

The average non-mortgage debenture or the average terminal bond probably fared as per Table G, with a preference in favor of terminal bonds. To the more speculative investor also, whose preference runs to stocks, the outcome of reorganizations should be of interest. There is much in the subjoined table (H) well worth notice both as calling attention to the success attending the subsequent development of the reorganized companies and as a commentary on the actual prosperity enjoyed by the companies in the period elapsed since 1896—a prosperity perhaps beyond all expectations of even the reorganizers.

Table H indicates very clearly that the average return on most junior securities issued shows a rate of return on the *par value* of the old junior securities which approximates, very closely at the present time, and promises soon to equal and eventually far to exceed the return on the original par value of the very best grade of bonds. The significance of this is enhanced when we recollect that whereas the old first mortgage bonds probably remained at a price which averaged near par even when in default, and could probably never have been purchased by the investor at much less than that figure, the stocks of the old companies probably had an average price for a considerable time before reorganization of not over 50%, and for a very long time many sold as low as 10%, so that a purchaser who bought those securities at those

prices and held the new securities issued in exchange, is actually receiving from two to ten times more return on his investment than an investor in the old first mortgage bonds. This outcome was, of course, preceded by a period in which there was practically no return, but that period was very short.

The table on the following page, summarizing the tables already given, is appended for the purpose of giving the reader a more ready comparison.

There is still another lesson to be learned from these tables which should be most carefully remembered by such as look down upon the principle of buying and selling every one to four years, outlined in this book. We refer to the fact that those most "conservative" investors and trustees, who buy only for *permanent* investment, *can still well afford to study fundamental statistics.*

Whether or not they ever intend to sell, they should confine their buying to times when fundamental statistics show that underlying conditions are becoming sound. This last is very important, *as it is a great mistake to buy simply because prices are low.*

Investors, if students of fundamental statistics, can well afford to purchase defaulted bonds and other securities of established railroads in the process of reorganization and make tremendous profits thereby, provided they are willing to study fundamental statistics, or, to state it in another way, they can purchase at 50, bonds which, during normal times after the reorganization is completed, they

SUMMARY

	Old Rate of Return Average	New Principal Received in Bonds	New Principal Received in Stock	Immediate Return on Former Principal	Subsequent Return on Former Principal
First Class.....	5.10%	109.10%	24.3%	4.997%	5.097%
Second Class.....	5.40%	71.30%	56.50%	4.250%	5.30%
Third Class.....	6.29%	90.33%	44.43%	4.74%	4.98%
Fourth Class.....	5.71%	40.71%	80.00%	2.333%	4.76%
Low Grade Div. & Branch Line Bonds.....	5.60%	53.00%	74.00%	3.280%	3.92%
Stocks.....	none	none	98.00%	0.476%	*4.87%

*This is the rate on par amounts of old securities and assessments if any.

would otherwise purchase at 110. They should, however, be careful not to purchase securities of companies which will soon have to go through a reorganization, just because these securities are selling low. The better way, as above suggested, is to wait until the reorganization is in force and then to purchase only after a careful investigation.

The keenest investors—depending upon the Law of Equal Reaction—systematically sell their investments in old companies and reinvest the proceeds in reorganized companies. The old saying that it is only three generations from “shirt sleeves to shirt sleeves” seems to apply to investments. What is best today is likely to be the poorest tomorrow, and vice versa.

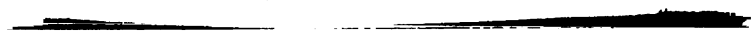
CHAPTER III

RANGE OF COMMODITY MARKET SINCE 1860,
SHOWING THE POSSIBILITIES OF PROFIT
TO MERCHANTS AND BANKERS. SPECIAL
TABLES ON COMMODITY PRICES.

A KNOWLEDGE of Fundamental Statistics is as important to merchants and manufacturers as to investors. The commodity market offers almost as great an opportunity for profit as the stock market. Capital invested in commodities should not depend upon chance for its development. To the merchant or anyone else interested wholly or in part in the price movement of crops, manufactures, raw material or merchandise, general figures on underlying conditions, controlling demand and supply, are essential.

To know when to buy and when to sell commodities, in order to take advantage of the larger swings of the market, the merchant must know what the present conditions are and which way the pendulum is swinging. To know how soon to curtail credits extended to customers, and acquire the cash needed to save his credit, when loans cannot easily be renewed, he must watch the Compositplot. Keeping his eyes only on the details of his own business will not enable him to avoid "hard times." Moreover, by broadening his study he is able greatly to increase his profits, as well as to eliminate losses.

The study of twenty-five important factors like those described in subsequent chapters of this book



by methods similar to those there outlined, results in the perception of clearly defined industrial movements in the past and shows the bearing these factors are having today in commerce and industry, as well as on the monetary and stock market outlook. Great fortunes have been made, the history of which reveals the fact that their possessors had a very accurate knowledge of approaching conditions, because of a keen understanding of fundamental statistics.

As an illustration of possible profits that can be made simply by the purchase and sale of commodities in connection with a study of Fundamental Statistics, the following problem is submitted. Starting with a capital of a little over fifty thousand dollars, ten commodities were selected for purchase. Bought first in 1860, they were sold and bought again at intervals of from three to seven years, according to what the figures on "underlying conditions" indicated. The prices used are those given in the closing paragraphs of this chapter and no departure from the years selected was made, except where there was a choice of either of two years. In such cases, it was assumed that the purchaser would buy later, sell earlier, or leave more cash on deposit as the conditions warranted. The original proportion of the different articles has been kept the same; and the interest, added to the principal on deposit in the intervals between selling and buying, has been reckoned at 4%. Since all commodities are not affected alike by the same conditions, slight losses were allowed

to occur as they would naturally. The resulting amount shows that in about fifty years \$54,931 becomes about \$1,000,000; or that \$1,000,000 would become \$18,000,000. By working a similar problem with a single commodity, a very much greater profit would have been possible. Thus, if \$53,000 was invested in iron in 1860, it would have equalled today about \$3,000,000. This clearly demonstrates that even the great mercantile fortunes have been acquired by taking advantage of the same laws and changes that give opportunities of profit to the banker and the investor.

PROBLEM ILLUSTRATING PROFITS DERIVED
FROM TRANSACTIONS IN COMMODITIES
USING FUNDAMENTAL STATISTICS AS A
GUIDE IN BUYING AND SELLING, 1860 TO
1920.

Basis, original quantities: 1,000 tons iron; 5,000 bushels wheat; 5,000 bushels corn; 10,000 lbs. cotton; 10,000 lbs. sugar; 10,000 lbs. wool; 10,000 lbs. coffee; 1,000 lbs. rubber; 500 barrels pork; 10,000 lbs. copper. After the first transaction these quantities were multiplied by the numbers shown in the parentheses.

PRICES SAME AS IN TABLES FOLLOWING

Original purchase 1860.....	\$54,931.00
First sale 1864.....	130,476.25
Capital on dep. 4 yrs. @ simp. int. P. & I. to 1869.....	151,352.45
Second purchase 1869 (1.8 × orig. quan.)...	150,737.85
Remaining capital.....	614.60
Second sale 1872 (1.8 × orig. quan.).....	153,194.40
Capital plus 5 yrs. int. and remaining capital & int. to 1878.....	184,669.14
Third purchase 1878 (4.46 × orig. quan.)...	184,554.80

Remaining capital.....	\$114.34
Third sale 1882 (4.46 × orig. quan.).....	261,547.78
Proceeds of third sale on dep. 2 yrs.....	282,471.60
Remaining capital & int. on dep. 7 yrs.....	146.36
Total capital 1885.....	282,617.96
Fourth purchase 1885 (7.19 × orig. quan.)..	282,610.14
Remaining capital.....	7.82
Fourth sale 1887 (7.19 × orig. quan.).....	349,574.21
Proceeds of 4th sale on dep. 8 yrs. to 1896...	461,437.96
Remaining capital on dep. 11 yrs. to 1896...	11.26
Total capital 1896.....	461,449.22
Fifth purchase 1896 (15.3 × orig. quan.)....	459,872.10
Remaining capital.....	1,577.12
Fifth sale 1902 (15.3 × orig. quan.).....	697,914.09
Proceeds of 5th sale on dep. 1 yr. to 1904....	725,830.65
Remaining capital & int. to 1904.....	2,081.80
Total capital 1904.....	727,912.45
Sixth purchase 1904 (18 × orig. quan.).....	727,875.00
Remaining capital.....	37.45
Sixth sale 1907.....	892,913.40
Proceeds of 6th sale plus capital and int. on remaining capital to 1908.....	892,956.84
Seventh purchase 1908 (20.9 × orig. quan.)..	891,281.55
Remaining capital.....	1,675.29
Seventh sale 1910.....	1,000,483.00
Proceeds of 7th sale on dep. 3 yrs. to 1914...	1,120,540.96
Remaining capital & int.....	2,010.35
Total capital 1914.....	1,122,551.31
Eighth purchase 1914 (26.2 × orig. quan.)..	1,119,630.80
Remaining capital.....	2,920.51
Eighth sale 1917.....	2,132,418.50
Proceeds 8th sale plus remaining capital and int. to April, 1917.....	2,132,768.96
Capital on dep. 3 yrs. @ simp. int. to April, 1920.....	2,388,701.23

When one realizes that if a capital of \$50,000 could have been increased to about \$900,000 in less than fifty years, simply by a study of fundamental statistics and without borrowing any money or purchasing any but suitable commodities, the great value of this subject to the merchant becomes evident. This, moreover, can be accomplished without any salesman, overhead charges, or other expenses. If to these figures we should add the natural profit derived from buying at wholesale and selling at retail, or an average manufacturing profit, the \$50,000 would become nearly \$20,000,000. Thus a capital of \$2,500 would accrue to over \$1,000,000 by combining either the manufacturer's or retailer's profit with a knowledge of fundamental statistics.

In addition to the value of Fundamental Statistics for determining the trend of demand, supply and prices, they are of even more value for determining the amount of credit which manufacturers and merchants should at any time extend to customers; but as their use in connection with "credits" is so well understood, no detailed explanation is given in this book.

PRICES OF TEN STAPLE COMMODITIES
AVERAGE WHOLESALE PRICE FROM 1860-1920

1860

Wheat \$1.37 per bu.; corn \$.73 per bu.; cotton \$.11 per lb.; sugar \$.0988 per lb.; wool \$.55 per lb.; iron \$22.70 per ton; copper \$.2287 per lb.; rubber \$.55 per lb.; pork \$20.00 per bbl.; coffee \$.1306 per lb.

1861

Wheat \$1.30 per bu.; corn \$0.60 per bu.; cotton \$0.1301 per lb.; sugar \$0.08 $\frac{1}{4}$ per lb.; wool \$0.38 per lb.; iron \$20.26 per ton; copper \$0.2225 per lb.; rubber \$0.55 per lb.; pork \$21.00 per bbl.; coffee \$0.1275 per lb.

1862

Wheat \$1.28 per bu.; corn \$0.59 $\frac{1}{4}$ per bu.; cotton \$0.3129 per lb.; sugar \$0.11 $\frac{5}{8}$ per lb.; wool \$0.48 per lb.; iron \$23.92 per ton; copper \$0.2187 per lb.; rubber \$0.48 per lb.; pork \$15.34 per bbl.; coffee \$0.205 per lb.

1863

Wheat \$1.16 per bu.; corn \$0.84 per bu.; cotton \$0.6721 per lb.; sugar \$0.14 $\frac{1}{8}$ per lb.; wool \$0.75 per lb.; iron \$35.24 per ton; copper \$0.3387 per lb.; rubber \$0.87 $\frac{1}{2}$ per lb.; pork \$18.50 per bbl.; coffee \$0.2965 per lb.

1864

Wheat \$2.01 per bu.; corn \$1.44 $\frac{1}{2}$ per bu.; cotton \$1.015 per lb.; sugar \$0.25 $\frac{9}{16}$ per lb.; wool \$1.00 per lb.; iron \$59.22 per ton; copper \$0.47 per lb.; rubber \$0.80 per lb.; pork \$44.00 per bbl.; coffee \$0.3775 per lb.

1865

Wheat \$2.04 per bu.; corn \$1.26 $\frac{1}{2}$ per bu.; cotton \$0.8338 per lb.; sugar \$0.21 $\frac{1}{2}$ per lb.; wool \$0.75 per lb.; iron \$46.08 per ton; copper \$0.3925 per lb.; rubber \$1.20 per lb.; pork \$38.00 per bbl.; coffee \$0.2537 $\frac{1}{2}$ per lb.

1866

Wheat \$2.20 per bu.; corn \$0.90 per bu.; cotton \$0.432 per lb.; sugar \$0.16 $\frac{7}{8}$ per lb.; wool \$0.70 per lb.; iron \$46.84 per ton; copper \$0.3425 per lb.; rubber \$1.00 per lb.; pork \$34.00 per bbl.; coffee \$0.1718 per lb.

1867

Wheat \$3.33 per bu.; corn \$1.21 per bu.; cotton \$0.3159 per lb.; sugar \$0.15 $\frac{7}{8}$ per lb.; wool \$0.55 per lb.; iron \$44.08 per ton; copper \$0.2537 per lb.; rubber \$0.65 per lb.; pork \$24.50 per bbl.; coffee \$0.16 per lb.

1868

Wheat \$2.43 per bu.; corn \$1.23 per bu.; cotton \$0.2485 per lb.; sugar \$0.16 $\frac{1}{2}$ per lb.; wool \$0.46 per lb.; iron \$39.25 per ton; copper \$0.23 per lb.; rubber \$0.67 $\frac{1}{2}$ per lb.; pork \$30.00 per bbl.; coffee \$0.115 per lb.

1869

Wheat \$1.50 per bu.; corn \$1.02 $\frac{1}{4}$ per bu.; cotton \$0.2901 per lb.; sugar \$0.16 $\frac{3}{16}$ per lb.; wool \$0.48 per lb.; iron \$40.61 per ton; copper \$0.2425 per lb.; rubber \$0.82 per lb.; pork \$34.00 per bbl.; coffee \$0.0931 per lb.

1870

Wheat \$1.30 per bu.; corn \$1.02 per bu.; cotton \$0.2398 per lb.; sugar \$0.1351 per lb.; wool \$0.46 per lb.; iron \$33.23 per ton; copper \$0.2118 per lb.; rubber \$1.00 per lb.; pork \$30.50 per bbl.; coffee \$0.10 per lb.

1871

Wheat \$1.60 per bu.; corn \$0.77 per bu.; cotton \$0.1695 per lb.; sugar \$0.1312 per lb.; wool \$0.62 per lb.; iron \$35.08 per ton; copper \$0.2412 per lb.; rubber \$1.00 per lb.; pork \$23.00 per bbl.; coffee \$0.1375 per lb.

1872

Wheat \$1.62 per bu.; corn \$0.70 per bu.; cotton \$0.2219 per lb.; sugar \$0.1237 per lb.; wool \$0.72 per lb.; iron \$48.94 per ton; copper \$0.3556 per lb.; rubber \$0.72½ per lb.; pork \$16.00 per bbl.; coffee \$0.1631 per lb.

1873

Wheat \$1.76 per bu.; corn \$0.63 per bu.; cotton \$0.2014 per lb.; sugar \$0.1136 per lb.; wool \$0.50 per lb.; iron \$42.79 per ton; copper \$0.28 per lb.; rubber \$0.74 per lb.; pork \$18.00 per bbl.; coffee \$0.1862 per lb.

1874

Wheat \$1.39 per bu.; corn \$0.86 per bu.; cotton \$0.1795 per lb.; sugar \$0.1050 per lb.; wool \$0.53 per lb.; iron \$30.19 per ton; copper \$0.22 per lb.; rubber \$0.75 per lb.; pork \$24.75 per bbl.; coffee \$0.2625 per lb.

1875

Wheat \$1.33 per bu.; corn \$0.84 per bu.; cotton \$0.1546 per lb.; sugar \$0.1061 per lb.; wool \$0.52 per lb.; iron \$25.53 per ton; copper \$0.2268 per lb.; rubber \$0.58½ per lb.; pork \$23.50 per bbl.; coffee \$0.1806 per lb.

1876

Wheat \$1.35 per bu.; corn $\$0.62\frac{1}{2}$ per bu.; cotton \$0.1298 per lb.; sugar \$0.1051 per lb.; wool \$0.38 per lb.; iron \$22.19 per ton; copper \$0.21 per lb.; rubber \$0.64 per lb.; pork \$22.75 per bbl.; coffee \$0.175 per lb.

1877

Wheat \$1.63 per bu.; corn $\$0.59\frac{1}{4}$ per bu.; cotton \$0.1182 per lb.; sugar \$0.1073 per lb.; wool \$0.50 per lb.; iron \$18.92 per ton; copper \$0.19 per lb.; rubber \$0.58 per lb.; pork \$17.95 per bbl.; coffee \$0.1943 per lb.

1878

Wheat \$1.24 per bu.; corn $\$0.53\frac{1}{2}$ per bu.; cotton \$0.1122 per lb.; sugar \$0.0907 per lb.; wool \$0.36 per lb.; iron \$17.67 per ton; copper \$0.1656 per lb.; rubber \$0.49 per lb.; pork \$11.35 per bbl.; coffee \$0.1385 per lb.

1879

Wheat \$1.24 per bu.; corn \$0.47 per bu.; cotton \$0.1084 per lb.; sugar \$0.0881 per lb.; wool \$0.37 per lb.; iron \$21.72 per ton; copper \$0.1862 per lb.; rubber \$0.51 per lb.; pork \$13.75 per bbl.; coffee \$0.1387 per lb.

1880

Wheat \$1.30 per bu.; corn \$0.55 per bu.; cotton \$0.1151 per lb.; sugar \$0.0980 per lb.; wool \$0.46 per lb.; iron \$28.48 per ton; copper \$0.2143 per lb.; rubber \$0.81 per lb.; pork \$19.00 per bbl.; coffee \$0.15 per lb.

1881

Wheat \$1.30 per bu.; corn \$0.62 per bu.; cotton \$0.1203 per lb.; sugar \$0.0970 per lb.; wool \$0.42 per lb.; iron \$25.17 per ton; copper \$0.1818 per lb.; rubber \$0.76 per lb.; pork \$20.00 per bbl.; coffee \$0.1212 per lb.

1882

Wheat \$1.32 per bu.; corn \$0.77 per bu.; cotton \$0.1156 per lb.; sugar \$0.0935 per lb.; wool \$0.42 per lb.; iron \$25.77 per ton; copper \$0.1912 per lb.; rubber \$0.87 per lb.; pork \$24.75 per bbl.; coffee \$0.0975 per lb.

1883

Wheat \$1.17 per bu.; corn \$0.64 per bu.; cotton \$0.1188 per lb.; sugar \$0.0865 per lb.; wool \$0.39 per lb.; iron \$22.42 per ton; copper \$0.165 per lb.; rubber \$1.07 per lb.; pork \$20.15 per bbl.; coffee \$0.0931 per lb.

1884

Wheat \$1.00 per bu.; corn \$0.61½ per bu.; cotton \$0.1098 per lb.; sugar \$0.0675 per lb.; wool \$0.35 per lb.; iron \$19.81 per ton; copper \$0.13 per lb.; rubber \$0.96 per lb.; pork \$19.50 per bbl.; coffee \$0.1062 per lb.

1885

Wheat \$0.94 per bu.; corn \$0.51 per bu.; cotton \$0.1045 per lb.; sugar \$0.0653 per lb.; wool \$0.32 per lb.; iron \$17.99 per ton; copper \$0.1083 per lb.; rubber \$0.56 per lb.; pork \$13.25 per bbl.; coffee \$0.09 per lb.

1886

Wheat \$0.88 $\frac{1}{4}$ per bu.; corn \$0.52 $\frac{1}{4}$ per bu.; cotton \$0.0928 per lb.; sugar \$0.0623 per lb.; wool \$0.33 per lb.; iron \$18.71 per ton; copper \$0.1100 per lb.; rubber \$0.61 per lb.; pork \$12.20 per bbl.; coffee \$0.095 per lb.

1887

Wheat \$0.88 per bu.; corn \$0.48 $\frac{1}{4}$ per bu.; cotton \$0.1021 per lb.; sugar \$0.0602 per lb.; wool \$0.34 per lb.; iron \$20.93 per ton; copper \$0.1385 per lb.; rubber \$0.76 per lb.; pork \$24.00 per bbl.; coffee \$0.1684 per lb.

1888

Wheat \$0.94 per bu.; corn \$0.59 $\frac{1}{4}$ per bu.; cotton \$0.1003 per lb.; sugar \$0.0718 per lb.; wool \$0.29 per lb.; iron \$18.88 per ton; copper \$0.1677 per lb.; rubber \$0.76 per lb.; pork \$16.00 per bbl.; coffee \$0.1581 per lb.

1889

Wheat \$0.91 per bu.; corn \$0.43 $\frac{1}{4}$ per bu.; cotton \$0.1065 per lb.; sugar \$0.0789 per lb.; wool \$0.35 per lb.; iron \$17.76 per ton; copper \$0.1349 per lb.; rubber \$0.74 per lb.; pork \$13.37 $\frac{1}{4}$ per bbl.; coffee \$0.1765 per lb.

1890

Wheat \$0.92 per bu.; corn \$0.48 $\frac{1}{4}$ per bu.; cotton \$0.1107 per lb.; sugar \$0.0627 per lb.; wool \$0.33 per lb.; iron \$18.41 per ton; copper \$0.156 per lb.; rubber \$0.80 per lb.; pork \$13.62 $\frac{1}{4}$ per bbl.; coffee \$0.1793 per lb.

1891

Wheat \$1.05 per bu.; corn \$0.67½ per bu.; cotton \$0.086 per lb.; sugar \$0.0465 per lb.; wool \$0.31 per lb.; iron \$17.52 per ton; copper \$0.1276 per lb.; rubber \$0.78 per lb.; pork \$13.00 per bbl.; coffee \$0.1671 per lb.

1892

Wheat \$0.908 per bu.; corn \$0.54 per bu.; cotton \$0.0771 per lb.; sugar \$0.0435 per lb.; wool \$0.28 per lb.; iron \$15.75 per ton; copper \$0.1156 per lb.; rubber \$0.6763 per lb.; pork \$15.05 per bbl.; coffee \$0.1430 per lb.

1893

Wheat \$0.739 per bu.; corn \$0.499 per bu.; cotton \$0.0856 per lb.; sugar \$0.0484 per lb.; wool \$0.24 per lb.; iron \$14.52 per ton; copper \$0.1075 per lb.; rubber \$0.7167 per lb.; pork \$21.80 per bbl.; coffee \$0.1723 per lb.

1894

Wheat \$0.611 per bu.; corn \$0.509 per bu.; cotton \$0.0694 per lb.; sugar \$0.0412 per lb.; wool \$0.20 per lb.; iron \$12.66 per ton; copper \$0.0952 per lb.; rubber \$0.6744 per lb.; pork \$14.57½ per bbl.; coffee \$0.1654 per lb.

1895

Wheat \$0.669 per bu.; corn \$0.477 per bu.; cotton \$0.0744 per lb.; sugar \$0.0412 per lb.; wool \$0.18 per lb.; iron \$13.10 per ton; copper \$0.1053 per lb.; rubber \$0.7425 per lb.; pork \$12.87½ per bbl.; coffee \$0.1592 per lb.

1896

Wheat \$0.781 per bu.; corn \$0.340 per bu.; cotton \$0.0793 per lb.; sugar \$0.0453 per lb.; wool \$0.17 per lb.; iron \$12.95 per ton; copper \$0.1098 per lb.; rubber \$0.80 per lb.; pork \$10.85 per bbl.; coffee \$0.1233 per lb.

1897

Wheat \$0.954 per bu.; corn \$0.319 per bu.; cotton \$0.07 per lb.; sugar \$0.0455 per lb.; wool \$0.21½ per lb.; iron \$12.10 per ton; copper \$0.1136 per lb.; rubber \$0.8454 per lb.; pork \$9.00 per bbl.; coffee \$0.0793 per lb.

1898

Wheat \$0.952 per bu.; corn \$0.376 per bu.; cotton \$0.0594 per lb.; sugar \$0.0497 per lb.; wool \$0.28 per lb.; iron \$11.66 per ton; copper \$0.1205 per lb.; rubber \$0.9271 per lb.; pork \$12.30 per bbl.; coffee \$0.0633 per lb.

1899

Wheat \$0.794 per bu.; corn \$0.413 per bu.; cotton \$0.0688 per lb.; sugar \$0.0492 per lb.; wool \$0.29 per lb.; iron \$19.36 per ton; copper \$0.1776 per lb.; rubber \$0.9954 per lb.; pork \$10.45 per bbl.; coffee \$0.0604 per lb.

1900

Wheat \$0.804 per bu.; corn \$0.453 per bu.; cotton \$0.0925 per lb.; sugar \$0.0532 per lb.; wool \$0.28½ per lb.; iron \$19.98 per ton; copper \$0.1665 per lb.; rubber \$0.9817 per lb.; pork \$16.00 per bbl.; coffee \$0.0822 per lb.

1901

Wheat \$0.803 per bu.; corn \$0.567 per bu.; cotton \$0.0875 per lb.; sugar \$0.0505 per lb.; wool \$0.25 per lb.; iron \$15.87 per ton; copper \$0.1672 per lb.; rubber \$0.8496 per lb.; pork \$16.80 per bbl.; coffee \$0.0646 per lb.

1902

Wheat \$0.836 per bu.; corn \$0.684 per bu.; cotton \$0.09 per lb.; sugar \$0.0446 per lb.; wool \$0.26 per lb.; iron \$22.19 per ton; copper \$0.1216 per lb.; rubber \$0.7273 per lb.; pork \$18.70 per bbl.; coffee \$0.0586 per lb.

1903

Wheat \$0.853 per bu.; corn \$0.572 per bu.; cotton \$0.1118 per lb.; sugar \$0.0464 per lb.; wool \$0.31½ per lb.; iron \$19.92 per ton; copper \$0.1372 per lb.; rubber \$0.9054 per lb.; pork \$18.37 per bbl.; coffee \$0.0559 per lb.

1904

Wheat \$1.107 per bu.; corn \$0.594 per bu.; cotton \$0.1175 per lb.; sugar \$0.0477 per lb.; wool \$0.32½ per lb.; iron \$15.57 per ton; copper \$0.1301 per lb.; rubber \$1.0875 per lb.; pork \$16.58 per bbl.; coffee \$0.0782 per lb.

1905

Wheat \$1.028 per bu.; corn \$0.593 per bu.; cotton \$0.098 per lb.; sugar \$0.0526 per lb.; wool \$0.36 per lb.; iron \$17.88 per ton; copper \$0.1589 per lb.; rubber \$1.2425 per lb.; pork \$16.50 per bbl.; coffee \$0.0832 per lb.

1906

Wheat \$0.865 per bu.; corn \$0.56 per bu.; cotton \$0.115 per lb.; sugar \$0.0452 per lb.; wool \$0.33 per lb.; iron \$20.98 per ton; copper \$0.1961 per lb.; rubber \$1.2131 per lb.; pork \$20.00 per bbl.; coffee \$0.0811 per lb.

1907

Wheat \$0.963 per bu.; corn \$0.64 per bu.; cotton \$0.121 per lb.; sugar \$0.0465 per lb.; wool \$0.34 per lb.; iron \$23.89 per ton; copper \$0.2125 per lb.; rubber \$1.0633 per lb.; pork \$17.56 per bbl.; coffee \$0.0658 per lb.

1908

Wheat \$1.04 $\frac{1}{2}$ per bu.; corn \$0.786 per bu.; cotton \$0.106 per lb.; sugar \$0.0496 per lb.; wool \$0.34 per lb.; iron \$17.70 per ton; copper \$0.133 per lb.; rubber \$0.8708 per lb.; pork \$15.973 per bbl.; coffee \$0.0628 per lb.

1909

Wheat \$1.20 $\frac{1}{2}$ per bu.; corn \$0.767 per bu.; cotton \$0.126 per lb.; sugar \$0.0476 per lb.; wool \$0.35 per lb.; iron \$17.81 per ton; copper \$0.129 per lb.; rubber \$1.505 per lb.; pork \$21.5673 per bbl.; coffee \$0.0783 per lb.

1910

Wheat \$1.18 per bu.; corn \$0.663 per bu.; cotton \$0.15 per lb.; sugar \$0.0497 per lb.; wool \$0.31 per lb.; iron \$17.36 per ton; copper \$0.127 per lb.; rubber \$1.956 per lb.; pork \$24.04 per bbl.; coffee \$0.0952 per lb.

1911

Wheat \$0.99 per bu.; corn \$0.635 per bu.; cotton \$0.129 per lb.; sugar \$0.05345 per lb.; wool \$0.28 per lb.; iron \$15.71 per ton; copper \$0.1240 per lb.; rubber \$1.16 per lb.; pork \$19.63 per bbl.; coffee \$0.1341 per lb.

1912

Wheat \$1.099 per bu.; corn \$0.727 per bu.; cotton \$0.115 per lb.; sugar \$0.049 per lb.; wool \$0.295 per lb.; iron \$16.40 per ton; copper \$0.163 per lb.; rubber \$1.080 per lb.; pork \$19.72 per bbl.; coffee \$0.143 per lb.

1913

Wheat \$1.05 per bu.; corn \$0.698 per bu.; cotton \$0.128 per lb.; sugar \$0.043 per lb.; wool \$0.251 per lb.; iron \$16.97 per ton; copper \$0.152 per lb.; rubber \$0.897 per lb.; pork \$22.06 per bbl.; coffee \$0.108 per lb.

1914

Wheat \$1.08 per bu.; corn \$0.784 per bu.; cotton \$0.109 per lb.; sugar \$0.047 per lb.; wool \$0.262 per lb.; iron \$15.07 per ton; copper \$0.132 per lb.; rubber \$0.724 per lb.; pork \$22.60 per bbl.; coffee \$0.082 per lb.

1915

Wheat \$1.378 per bu.; corn \$0.829 per bu.; cotton \$0.103 per lb.; sugar \$0.057 per lb.; wool \$0.301 per lb.; iron \$15.25 per ton; copper \$0.181 per lb.; rubber \$0.626 per lb.; pork \$18.21 per bbl.; coffee \$0.074 per lb.

1916

Wheat \$1.412 per bu.; corn \$0.912 per bu.; cotton \$0.1425 per lb.; wool \$0.329 per lb.; iron \$21.20 per ton; copper \$0.2846 per lb.; rubber \$0.745 per lb.; pork \$25.875 per bbl.; coffee \$0.092 per lb.; sugar \$0.07 per lb.

1917

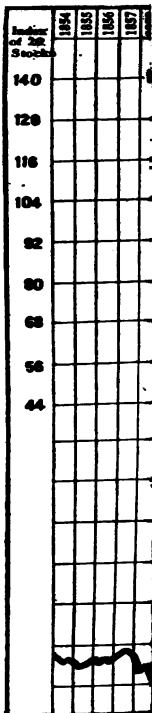
Wheat \$2.346 per bu.; corn \$1.7763 per bu.; cotton \$0.2261 per lb.; wool \$0.606 per lb.; iron \$35.98 per ton; copper \$0.2942 per lb.; rubber \$0.714 per lb.; pork \$41.37 per bbl.; coffee \$0.0953 per lb.; sugar \$0.0764 per lb.

1918

Wheat \$2.31 per bu.; corn \$1.84 per bu.; cotton \$0.3169 per lb.; wool \$0.75 per lb.; iron \$33.25 per ton; copper \$0.245 per lb.; rubber \$0.633 per lb.; pork \$48.91 per bbl.; coffee \$0.0953 per lb.; sugar \$0.0795 per lb.

1919

Wheat \$2.336 per bu.; corn \$1.771 per bu.; cotton \$0.3233 per lb.; wool \$0.764 per lb.; iron \$28.46 per ton; copper \$0.1926 per lb.; rubber \$0.556 per lb.; pork \$51.98 per bbl.; coffee \$0.178 per lb.; sugar \$0.09046 per lb.



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ABROAD

To buy bonds when money is cheap, in order to

A WORD TO BANKERS

As a check upon the above specific figures, the same general results may be shown by the use of Bradstreet's Index of American Commodity Prices or the Economist's Index of English Commodity Prices. Both of these indices show tremendous fluctuations, and most clearly demonstrate the great need for merchants and all dependent upon the welfare of merchants, to study fundamental statistics.

Though economists agree that there is a very intimate relation between the prices of commodities and the price of money, many banks expend far too little time in studying fundamental statistics and in forecasting future money conditions. With a general foreknowledge of the tendency of rates, a bank may so arrange its maturities as to obtain at least one-half of one per cent more on outstanding loans than is possible without such knowledge. It may be necessary to allow a customer to choose either the "rate" or the "maturity," but banks should insist upon their right to fix the other factor and, when doing so, should have in mind the tendency of the money market. If the tendency is upward and the borrower desires to pay only the market rate, the bank should insist on a short loan; while if the borrower desires a long-time loan, the bank should insist on a rate above current market rates. The reverse is true if the tendency of money is downward. Some banks even keep a weekly record of the exact rate of income their loans average.

To buy bonds when money is cheap, in order to

obtain a higher income than can be obtained on notes, is a very dangerous practice. Banks then purchase bonds after the price has advanced and are often compelled to sell them at a loss during the next money stringency or else refuse accommodation to customers. By studying the teachings of fundamental statistics, however, a bank may safely purchase high-grade securities with the expectation of later selling them at a profit. Then such banks know when this time for selling said securities is at hand. The most conservative banks purchase for permanent investment only government or such bonds as can be counted as "Reserve," and purchase general corporation bonds (those of the very highest grade) only for the purpose of selling again at a profit in the course of a short time. Such banks buy them during a period of high money when bonds are always low; and sell them before money again becomes high.

These conservative banks not only receive an income of about 4% upon such securities and a profit of from 10% to 20% on the sale, but also are always in the strongest possible condition with very large reserves at the time of a crash or money stringency. Therefore, the study of fundamental statistics enables banks to receive greater income from their loans and large profits from the purchase and sale of securities. Such a study also helps such banks to buy only the highest grade of securities, and, moreover, sell them before the money is needed for reserve purposes and the accommodation of local customers.

In short, banks have two distinct functions:

(1) Collecting of savings and directing their investment.

(2) Regulating the number and growth of transportation, industrial and commercial enterprises.

The first function is performed by collecting money from a large number of people, known as "depositors," and loaning the same for definite periods by purchasing therewith commercial paper and other securities such as most depositors would be unable to do independently.

The second function is performed in two ways:

(1) By varying the amount of cash and securities held; for instance, during periods of panic or of depression, when most individuals withdraw money from useful channels and withhold cash, it is a bank's duty to give out all cash possible by purchasing such good commercial paper and high-grade securities as are selling below their true value. On the other hand, during periods of great prosperity, it is a conservative bank's duty to dispose of a large portion of this commercial paper and these other securities, storing up large cash reserves pending the next period of money stringency and panic conditions.

(2) By creating and monetizing credit through the issue of notes and creation of deposits, and placing this credit at the disposal of those enterprisers whose venture the bank officials believe likely to prove sound and profitable.

In this way such banks not only perform a great service both to depositors and borrowers by com-

binning small sums and loaning them in safe and profitable channels, but also act as regulators and "storage basins" for the entire business community. Conservative banks store cash and curtail credits during periods of great prosperity, when the public is willing to loan anybody and buy anything, and then give out such cash and expand their credits during periods of depression when the public refuses to loan solvent borrowers or to purchase even the highest-grade securities. Moreover, for performing these two functions such banks receive a twofold reward, namely: the *market rate of interest* on the loans and securities held, and also every few years a *large profit on the sale of securities*. Moreover, banks which do not fulfill these two functions not only fail to serve fully their true purpose in the community, but also make very much smaller profits and assume very much greater risks.

Many banks have heretofore failed to perform this second function owing to their inability to obtain *independently* the necessary statistics for correctly judging the trend of conditions; but as such statistics may now be obtained at small expense from a central agency,* this objection is overcome. The above also applies as well to borrowers of money as to lenders.

Moreover, the most successful manufacturers and merchants have found that the system of "*fixed*"

*In order that firms may keep accurately informed as to present and future conditions my statisticians accumulate and analyze the necessary facts and figures used in determining the same. These figures we supply to our subscribers together with certain Weekly Barometer Figures. These Barometers are of great value in connection with the purchase of merchandise, the discounting of commercial paper and the investment of money.
R. W. B.

credit limits for customers is absolutely wrong in principle; unjust to customers; unfair to the sales force and a source of danger to the firm. Instead, a system of "flexible" credit limits is used by which credits are increased and decreased, in accordance with the relative position and size of the latest area of the Compositplot of Business Conditions explained in the following chapter. *This system invariably results in greatly increased sales and yet insures that a firm shall be in a strong financial position at a time of panic or business crisis. These various practical applications of fundamental statistics cannot, however, be explained in detail in this volume.*

An understanding of the Law of Equal and Opposite Reaction is of great value in the study of credits. This law can always be depended upon. There never was known to be an exception. The law applies both to general conditions and to individual concerns.

CHAPTER IV

THE LAW OF EQUAL AND OPPOSITE REACTION THEORY OF THE COMPOSITPLOT

ALL that has been said up to the present regarding Fundamental Statistics has been to show their great value to bankers, merchants and investors. It is now time to show how the subjects heretofore mentioned are studied, and what justification we have for using the laws upon which this work is based.

All readers at once associate the name of Sir Isaac Newton with an apple falling from a tree. This is because Sir Isaac was the first who asked why apples fall down instead of up, which question led to his discovery of the law of gravitation. It is evident from a study of Newton's life, however, that he may have considered his greatest work, not the discovery of the law of gravitation, but rather his researches into the Law of Action and Reaction.† Newton felt that his studies of the law of gravitation were practically complete, and nothing new would be discovered from further investigation thereof. He was sure, however, that he had only made a meagre investigation of the Law of Action and Reaction, and that research into that law would be rewarded by new and wonderful discoveries. Briefly, the Law of Action and Reaction is, "*To every action there is always opposed an equal reaction.*"*

†For brevity this law is often referred to as the Law of Equal Reaction.

*See page 15 of Newton's Mathematical Principles of Natural Philosophy—"Motts Second Edition."

This is one of the most fundamental laws of the universe, underlying as it does all the sciences, from astronomy to chemistry. At the present time, it is usually taught to young people in connection with the study of physics under a chapter relating to mechanics. Almost everyone has endeavored to lift a rock by the use of a crow bar. In doing this, he has placed one end of the crow bar under an edge of the rock which he is attempting to raise, and then a few inches from that end of the crow bar which is underneath the rock, he has put a small stone which he uses as a fulcrum. A person who could not raise this load one-thousandth of an inch by straight lifting is able to raise it several inches by pressing down on the far end of the crow bar. Of course crow bars were used to raise stones when the pyramids were being built in Egypt, centuries before Sir Isaac Newton was born; but Newton was the first man to discover that the distance on the crow bar from the fulcrum to the operator's hand multiplied by the force used by the operator equals the distance from the fulcrum to the stone multiplied by the weight of the stone.

After the discovery that the Law of Action and Reaction applied to the lifting of materials, construction of all kinds was made much simpler; for, knowing the weight of the object to be lifted, and the measurements of the lifting machine, one can figure with pencil and paper just the force required to perform the work. Conversely, with a limited amount of power, a builder is able to figure just how much he can move with the levers, pulleys,

etc., which he has on hand, and how much larger machinery he must get in order to do additional work.

As soon as Sir Isaac Newton published these facts, a scientific reason existed for the ordinary balance scales and scores of other instruments which were then in use and which have since been developed. This law is the basis of the steam engine, the electric dynamo, water-power machinery, and every other power machine. All calculation of forces and all formulas relating to them derived their conception from this Law of Action and Reaction.*

If there is one thing which science teaches, it is that this Law of Action and Reaction cannot be eliminated. We may dread it and attempt to ignore it, but it is always in operation in thousands of diversified ways. Whether making a balloon ascension or raising our feet in walking, we are working in accordance with the Law of Action and Reaction.

The study of hygiene is comparatively in the same stage in which that of mechanics was a couple of centuries ago. As a matter of history, it has been only in recent years that fundamental laws have been scientifically applied to the study of the human body. Instead of grasping the fact that the

*There is another simple illustration of this law, however, as applied to mechanics, to which I wish to refer: namely, the spring. Every one who has used a spring gun, knows that in loading the gun he himself has pushed back the spring, yet he is likely to think that the gun has more energy than he has. This idea, however, is a fallacy. It is impossible for a person to store in any spring more energy than he has in his body. The spring has simply the energy that one expends in pressing it down; while in shooting the bullet, the spring simply expends the energy which was put into it. Consequently there is a constant mathematical relation between the distance that the bullet goes and the force which one uses in loading the rifle.

same laws apply to men as to commodities, physicians used to doctor with different methods and various drugs, hoping to hit something, by hook or by crook, that would perform a cure. Recently, however, there has been a great change, and they have learned that men are simply machines, and that to do good work they themselves must be good mechanics. This means that instead of bleeding a patient and filling him up with drugs, as they did years ago, physicians now look upon their patients as machines and realize that the machine needs to be kept clean, well oiled and supplied with fresh power. The great heart specialists are now simply utilizing Newton's Law of Action and Reaction as applicable to the pump, while other specialists are realizing that other organs of the body are nothing but individual sewerage systems, power plants, and various other mechanical contrivances.

Moreover, physicians recognize Newton's Law of Action and Reaction in its relation to sleep, breathing, eating, exercise, etc. For instance, every man has a certain normal line of sleep; that is, he requires a certain amount of sleep, which varies with different individuals at different ages, but which for a given individual at a given age, is a constant factor. Furthermore, for all a man varies from this normal line of required sleep in one direction he must compensate by varying a corresponding amount the other side of the line. This can be illustrated by considering the X-Y line of our regular Compositplot* as representing the normal

*See chart inserted opposite the following page.

amount of work which a given man can average, the outline of the black areas representing the amount of work that he actually does. Whenever the man performs an abnormal amount of labor, causing him to lose sleep, a black area is formed above the X-Y line. It then becomes necessary for him to rest a corresponding amount, and this causes the black area to go below the X-Y line. Moreover, when any man attempts to ignore the Law of Action and Reaction and remain above his normal X-Y line too long, he suddenly becomes ill, and is forced to go to bed and make up his required amount of rest. This Law of Action and Reaction applies in the same way to man's breathing, food and exercise. Our bodies are like the spring rifle; we get out of them only what we put into them.

Not only are certain physicians making great progress today through the use of Newton's Law of Action and Reaction, but psychologists as well are employing it in their experiments. It is a fact well known to students of Newton's investigations that the great scientist found this law to apply not only to mechanical and astronomical phenomena, but also believed it to apply to affairs more remotely removed from such sciences. McLaurin, in his famous treatise, entitled *Sir Isaac Newton's Philosophical Discoveries*,* discussing Newton's ideas concerning even spiritual manifestations, and referring to the Deity, says:

"The establishing of the equality of action and reaction, even in those powers which seem to sur-

*Page 388, edition of 1748.

is the end of nature. But for every benefit which you receive, a tax is levied. He is great who confers the most benefits. But the benefit we

*Page 388, edition of 1748.

pass mechanism, and to be more immediately derived from Him, seems to be an indication that those powers, while they derive their efficacy from Him, are, however, in a certain degree circumscribed and regulated in their operations by mechanical principles."*

A student of this treatise will see that Newton believed that the voluntary actions of men *en masse* are subject to the Law of Action and Reaction. We look upon a mob as the last thing which would work in accordance with scientific law, but psychologists tell us that the mob is one of the best illustrations of Newton's Law of Action and Reaction. In our study of history we look upon the French Revolution as something abnormal, but it could have been foretold by applying this law.

*Notwithstanding the developments of the Action and Reaction Theory in the mechanical, chemical and economic worlds, however wonderful and revolutionary they at times appear, nothing interests the writer so much as the study of its application to the teachings of Jesus. For centuries, people have mechanically read over the philosophy of Jesus, that "whatsoever a man soweth, that shall he also reap," without recognizing the scientific basis existing for these words as applied to spiritual matters. We have read about "overcoming evil with good," and have considered the Golden Rule as a splendid altruistic motto for life, but the scientific aspect of these precepts has never properly been emphasized. When, however, it is generally realized that the purpose of life is to acquire true happiness, and that religion is simply a force to aid us in such acquisition, the relation of the Law of Action and Reaction to these teachings will be recognized. Then scientists will be employed in religious work, as they long have been in connection with material studies, and as they are now becoming interested in biology and the study of the human body.

The fundamental teachings of the church relating to conduct have been respected, but have not been considered practical in their application to everyday life. Consequently, the precepts of the Hebrews and the Sermon on the Mount, as well as the words of other great religious leaders, have not been taken seriously as scientific teaching. A study of Newton's Law of Action and Reaction, however, in connection with the fundamentals of religion, shows that a scientific basis exists for faith, obedience, sacrifice, and everything else which the great prophets have emphasized as essential. This is referred to in Emerson's essay on "Compensation" as follows:

"Always pay; for, first or last, you must pay your entire debt. Persons and events may stand for a time between you and justice, but it is only a postponement. You must pay at last your own debt. Benefit is the end of nature. But for every benefit which you receive, a tax is levied. He is great who confers the most benefits. But the benefit we

Moreover, if some way could be found to multiply the intensity of the strained conditions existing prior to this revolution by the length of time that these conditions existed, it could doubtless be shown that the product thus obtained is approximately equal to the intensity of the French Revolution multiplied by its duration. Owing to the same law, the Napoleonic Wars were a natural reaction from the Revolution. Similarly, every intelligent police captain, engaged in handling acute situations, such as existed in London during the Suffragette activities, realizes the application of the Law of Action and Reaction to his work. By considering the number of persons engaged in a certain uprising and the intensity of that uprising, he is able to figure very closely when the next uprising will occur.

One of the most spectacular examples of this law is shown by the history of Japan. Many persons

receive must be rendered again, line for line, deed for deed, cent for cent, to somebody.

"The physiologist has observed that no creatures are favorites, but a certain compensation balances every gift and every defect. A surplusage given to one part is paid out of a reduction from another part of the same creature. If the head and neck are enlarged, the trunk and extremities are cut short. Every excess causes a defect; and every defect an excess.

"This Law of Compensation will not be balked of its end in the smallest iota. It is in vain to build or plot or combine against it. Things refuse to be mismanaged long. If the government is cruel, the governor's life is not safe. If you tax too high, the revenue will yield nothing. If you make the criminal code sanguinary, juries will not convict.

"The law of nature is: Do the thing, and you shall have the power; but they who do not the thing have not the power. Everywhere and always this law is sublime. The absolute balance of Give and Take, the doctrine that everything has its price; and if that price is not paid, not that thing but something else is obtained, and that it is impossible to get anything without its price—this doctrine is not less sublime in the columns of a ledger than in the budgets of states, in the laws of light and darkness, in all the *action and reaction of nature*."

Some day there surely will be a great religious revival which will far exceed, both in intensity and permanency, anything which has ever been witnessed before. Moreover, this will be due to a general recognition of the fact that the fundamental teachings of Jesus are based on purely scien-

wonder how the Japanese nation has been able to expand so rapidly during the last sixty years since Commodore Perry opened its ports to commerce. The Japanese are held up as world wonders for the tremendous progress which they have made in less than two generations. The explanation, however, is very simple when the Law of Action and Reaction is considered. For centuries that nation had been bottled up and had been gradually accumulating energy. Suddenly, the doors of opportunity were thrown open and the same result occurred psychologically as occurs mechanically when a charge of dynamite explodes. Furthermore, a mathematical equality exists between the product obtained by the multiplication of the number of years that Japan was bottled up and the intensity of that period, and the amount of its recent advancement multiplied by its duration. The book entitled, "The Great Illusion," by Norman Angell, illus-

tific grounds, especially upon Newton's Law of Action and Reaction, and that the Golden Rule is simply a statement of this law in general terms applicable to the man in the street.

All that we take away from others must, in some way, at some time, be given back. All that we do for others will, in some way, at some time, come back to us. We all have our normal X-Y lines, and all that we raise ourselves through covetousness above this X-Y line must be made up below it. Life is the same as the boy's spring gun; we can get out of it only what we put into it, although we can increase our capacity just as the boy could remodel and increase the capacity of his gun. We can *raise the slope* of our X-Y line of happiness, but to attempt to go above this line artificially is of no avail, as it must be made up by an equal reaction at some later date.

Moreover, it is interesting to think what it means to keep on our X-Y line. Scientifically, this simply means dealing justly, and doing unto others as we would that they should do unto us. For a long time artists have personified justice as a woman holding a pair of scales, without realizing the scientific fact that the primary Law of Action and Reaction underlies both moral justice and the mechanical scales. When we deal justly we keep on our line of growth, but whenever we deal unjustly we get off this line, and some day we must compensate therefor. *Whatever we do that raises the X-Y line of civilization is good, and reacts upon us as good; but whatever we do that lowers the X-Y line is evil, and such performances react upon us as evil.*

trates on every page the effect of Newton's Law of Action and Reaction upon nations and communities, which effect is vividly demonstrated in the great European War.

In this connection the following quotation of Prof. Wilhelm Ostwald* will be of interest:

"No large enterprise of a technical or industrial nature is undertaken nowadays without a very comprehensive knowledge of what its future is to be. We are not afraid to invest millions of dollars in a work which at the moment, when the expenditure is determined upon, has no other existence than a prophecy in the form of calculations and drawings made by engineers. But we know for a certainty that when the directions in the calculations and blueprints are carried out, a structure will arise possessing all the foretold properties, whether it be a bridge, a steamship, or an electrical plant.

"While in the technical pursuits prophecies of this sort have been developed to an extraordinary degree of accuracy, it is somewhat more difficult to gain foreknowledge and power of prophecy in the economic world. That is why the few who possess this quality to a greater extent than others, those who are able to foresee the future with greater certainty than others, easily achieve economic superiority. They conduct their transactions in accordance with their prophetic capacity, and so are able to pocket greater gains than their competitors. This ability to see into the future depends upon knowledge of the natural laws involved.

"Just as mathematics long ago succeeded in separating even the most complicated movements into their simple periodic component parts, so the statesman must learn to decompose the totality of human movements into the simple wave elements produced by self-regulation in the various fields of human activity. In this way politics can be transformed from a mere knack, as it has been regarded since olden times, into a science like technology with the power of sure and far-reaching prophecy."

*Professor Ostwald's work in the field of chemistry has given him an international reputation. He formerly held the chair of chemistry at Leipzig University.

That the law of equal reaction applies to economic or business conditions is indicated along two main lines, physical and psychical. This is because the conditions which prevail in the business world have as their effective causes both physical and psychical factors. For example, rainfall is an important physical factor that affects business cycles. This result is reached through the effect of rainfall on the crops which are always an influential factor in determining conditions. The records of the weather bureau show that dry and wet years do not alternate indiscriminately, but rather follow a clearly defined wave movement. This is to say that we have a series of years of sub-normal precipitation followed by a series of super-normal precipitation. An attempt has been made to show that sun spots were the cause of these variations in rainfall and that these followed an oscillatory motion, rising, increasing in size and activity, then gradually dying down. Whether or not sun spots can be used to forecast periods of sub-normal and super-normal rainfall, the fact is that weather bureau statistics show the existence of such periods. This means that whatever effect crop conditions have on economic cycles is exerted in accordance with the law of equal reaction.

But more important than the influence of rainfall are the psychical factors. Prosperity has a well-understood and clearly definable effect on men's minds. So also has a period of depression or adversity. Business conditions depend chiefly on what men do. What men do depends on what

they believe and think; I mean that men act according to their real beliefs and valuations—not necessarily according to what they *say* they believe and think.

This becomes clear if we follow through the sequence of events involved in a regular business cycle. Let us assume that we are in a period of depression. Mills are idle or running half-time, there is little demand for goods, and prices are low. Problems of unemployment are worrying our legislators. There is little or no profit in doing business and therefore little business done. Much capital lies idle, and money rates are low. The fact that a considerable number of people are out of employment and others have had their wages cut, reduces the buying power of the people as a whole. But this reduction of consumption is not caused by reduced buying power alone. The psychical effect of "hard times" is to induce economy. People have had their wages reduced, have been out of work themselves or seen others out of work. They become fearful of the future and are impressed with the advisability of saving something for a rainy day. Furthermore it is easier to save if everybody else is doing it. In a period of expansion, free expenditure is popular. We have to spend more to "keep up with the Joneses," but in hard times the "Joneses," like ourselves, have had their pay reduced. So we can reduce our expenditure without having their ostentation flaunted before our eyes. Economy, being a necessity, is made a virtue, and we are not ashamed to practise it.

This wave of economy and resulting saving is not confined to the rank and file. The capitalist class is hit by the reduction of dividends and the lowering of the rate of interest. Hardest hit of all are the business enterprisers—those who organize and direct industry, who take the responsibility of ownership and contract to pay fixed interest to capital and fixed wages to labor. They rely on the difference between the expenses of production and the price of the finished product for their share in distribution. When prices first commence to fall, this class acts as a buffer and stands considerable loss before reducing wages and closing plants.

Economies which result in a lowered demand for all goods, affect with special force the demand for luxuries. Hence those business enterprises that cater to the demand for luxuries suffer most. Failures are numerous; those firms that are high cost producers, whether because of poor natural conditions, over-capitalization, or inefficient management, are forced into bankruptcy. In fact, the only firms that survive such a period of readjustment are the efficient low-cost producers of the wares that people want and will pay for. Their business is in sound condition, their credits not over-extended, their natural advantages at least reasonably good, their capitalization low and management efficient. In short, the whole commercial fabric is on a sound and practical basis.

The cutting off and giving up of luxuries has two important effects. By throwing out of employment

persons engaged in the production of luxuries, it forces them to seek employment in the production of more necessary commodities, thus helping to lower the price of the latter to the consumer. The effect of the increase in savings which results from the popularization of economy is always a large increase in bank deposits, especially in the savings banks. Thus funds and credit accumulate and are available for use when the tide turns.

The other psychological effect of hard times is the increase in temperance and industry. Both of these are due in part to the economy referred to above. People realize the necessity of clinging to a job. When there are many candidates for few positions, those who have positions know that should they fail to give satisfaction it would be an easy matter to replace them. This is equally true of the business enterpriser. He is dependent for his business upon the patronage of his customers. Competition is keen and buying is slack. His success in business is measured by his ability to please his customers. This all leads to a powerful realization on the part of all classes that the only road to success is the road of service. It is clearly seen at such times that wealth is the natural reaction from service. Thus temperance, industry, regulated plain living, and a willingness to serve go to characterize to a large degree all classes of the population. It is just this psychical condition which lays the strongest foundation for a period of prosperity. Such conditions cannot fail to forecast improvement.

Ordinarily some specific event serves as the immediate stimulus to the inevitable upswing. That event may be a war, the opening of new lands, bumper crops or an abnormal increase in the circulating medium. The accumulation of savings is certain, sooner or later, to burn holes in the pockets of the savers. That is human nature. In any case, the primary element in the stimulating factor is the new demand for goods. This new demand raises the price of those goods upon which the demand falls; and since expenses of production do not rise at first or in equal degree, a considerable "spread" is thereby created between the price of the finished product and the expenses of production. This means profit for the business enterprisers in the lines affected. The wheels, therefore, begin to hum, more help is taken on, the mills work full time and the demand for necessary raw material rises.

If the new demand be sufficiently powerful so that it cannot be satisfied by the operation of the existing plants, other enterprisers with adaptable facilities are induced to enter the field. This means a call for more material, for labor, and as additions and new constructions are planned, a demand for building material, plants and machinery. As when a stone is thrown into the water, the ripples spread out in wider and wider circles, so the new demand for goods soon spreads out through the various relations of interdependence until it has affected the whole economic fabric.

With the general advance in the cost of living,

wage-earners are led to demand that the price of their services be increased to correspond with the rising scale of commodity prices. Demands for increased wages are generally granted because the price of goods is such that employers would rather pay a high rate than lose business by a strike.

Just as a period of depression carries its antidote in the sound psychological conditions which are created by depression, so a period of prosperity produces within itself a poison which destroys this prosperity. Prosperity makes men extravagant and careless. Rising prices show large profits on the books of the business enterprisers. Burning with a desire to make still more profits, they extend their plants and embark eagerly upon new business ventures. Increased income leads to an increase in personal expenditure. The employee who has steady work and who has seen his wages advance is filled with optimism, buys a motor-cycle, builds a shack in the woods or at a popular beach. Similarly, his employer buys a couple of high-priced motor cars and sends his family to Palm Beach for the winter.

A large market develops for luxuries of all kinds. Business enterprisers push on into this field also and the demand for new equipment still increases. As the natural reaction of adversity is economy, thrift, industry and temperance, so the reaction of prosperity is to make men extravagant, wasteful, self-indulgent and careless. High prices are relied upon to make good the loss by waste and inefficient management. There is little effort to

please the customers when the books are already filled with orders for the year ahead. Labor, while insisting on an increase of remuneration, grows increasingly careless as regards the quality of service given in exchange. Every man knows that if he is rebuked or his work criticised, he can easily find employment elsewhere.

A decrease in productivity is the inevitable result. The willingness to serve is then forgotten and in its place comes the notion that the high road to wealth and prosperity is the path of speculation. The air is full of stories of brokers' clerks and messenger boys who secured bargains in stocks or land and in consequence are now buying motor cars and country estates. Industry, perseverance and honest labor are at a discount and each one hopes to make his fortune by a lucky strike. There is no idea that can possess the human mind that has a more destructive effect on those qualities that are necessary for efficient production.

With increased production and rising cost of raw materials and labor, the "spread" between the price received for the finished product and the expense of production is gradually reduced. It ultimately becomes manifest that there has been a disproportionate investment in fixed capital in certain lines of industry. The great expansion in industry which characterizes a period of prosperity always produces a strain on financial resources. It takes more money to finance a business enterprise on a high scale of prices. The amount that banks will loan on stocks and bonds is based on their

market values, this amount rising and falling as the market value increases or diminishes. Similarly, also, the amount that can be borrowed on real estate and equipment depends upon the estimated value of the security. The value of stocks depends not upon their earnings, but upon their *expected* earnings. It is also possible to borrow more on the plant that is making large profits and expects to continue to do so, than upon one that is earning but little. Thus all along the line credits open and expand in proportion to expected earnings. When the rising costs of production result in reducing profits in the lines in which they first advanced, the high cost producers in these lines find themselves in a weak position. The demand for funds makes the interest rate high toward the close of a period of prosperity and this high cost of funds is a further check on the progress of industry. Creditors at this point begin to take alarm. Stocks are widely distributed on narrow margins, and conditions are ripe for a decline.

When the decline comes, the contraction of values necessitates a contraction of the credit which had been built up on the basis of the former inflation. Loans are called, and securities must be sold to meet them. Money rates rise and a panic ensues, accompanied by the failure of an increasing number of business enterprises. Commodity prices fall. Just as when prices are advancing, everyone is anxious to buy in anticipation of further advance, so when prices begin to fall everyone is anxious to sell in anticipation of further

decline. Thus demand collapses as the selling pressure increases. Since retailers will not order, wholesalers cannot, and manufacturers find themselves forced to curtail production. The keynote of this period is disappointment. Business enterprisers are disappointed at the failure of the expected profits. Investors are disappointed at the failures of those enterprises in which their money was invested. Wage earners are disappointed, first because their increased wages will not buy as much as they had expected; later, because the high wages and easy positions fail to be maintained.

When expansion is checked and the volume of business falls off, the demand for funds is also reduced. The interest rate falls because there is little profit in employing funds and we are entering upon another period of reaction. The duration of this reaction is dependent upon the time necessary to liquidate the unhealthful condition which the profits and period of prosperity have created. If the reaction is very intense this may be accomplished in a comparatively short time; if less intense the time will be longer. Not until the unsound business conditions and the disastrous psychological effects of too much prosperity have been liquidated and corrected can the foundations be laid for another period of prosperity.

There have always been periods of depression, periods of prosperity, and intermediate periods, as everyone already knows.* There is absolutely

*See Monetary Commission volume on "Crises," by Prof. O. M. W. Sprague of Harvard, a foremost authority on "Applied Economics."

no dispute regarding this first point, but as to the *duration* of these periods there is a distinct difference of opinion. It is the general impression that the great major cycles are of about twenty years' duration, and the minor cycles are of about five years' duration, with possibly still other cycles of about ten years' duration. Probably the most interesting of the older works on this was by Samuel Benner, who, from 1875 to 1884, formulated a most elaborate system of charts and who, without doubt, clearly foretold the panics of 1884 and 1893, and the prosperous years intervening. Many other men have devised other charts and theories, some based on supposed economics and others based on superstition, but all have been found to fail, and have been forgotten.*

Upon careful examination all these charts and theories are found to have two great defects; and it is chiefly because the Area Theory herein discussed eliminates these two defects that the theory and the Compositplot described in the following pages deserve attention.

Reaction Equals Action

The first defect in the old theory of Benner and other writers consisted in the fact that they based their calculations simply on either *time* or *intensity*, instead of on their product. There is no law in physics or nature that any action or any reaction must come with any definite *regularity*. There is, however, as before indicated, a law under which mechanics, medicine, and other sciences move,

*Recent scientific contributions to the literature on business cycles have been made by Mitchell, Copeland, Moore, Jones and others.

namely that "action and reaction are equal." This is absolutely true; but when the student attempts to go one step farther, he generally fails. For instance, we may say that certain reaction amounts to one hundred foot-pounds, but whether the body weighs one hundred pounds and is moved one foot or weighs only one pound and is moved one hundred feet, we have no way of knowing until we learn one factor.

In other words, to say that a period of prosperity or period of depression will last any given time, irrespective of the business activity of the country during such time, is contrary to all basic law. Yet upon such reasoning most of our predecessors have worked, while the others believed that a change in conditions comes when figures for pig-iron, bank clearings or commodity prices reach a certain point. They entirely ignore the *product* of time and intensity. Only by multiplying one by the other can the true reaction be ascertained. Time, then, may be compared to space, and intensity may be compared to weight, and their *product* to space multiplied by weight, or to "foot-pounds."

For this reason, when studying a Composiplot like the annexed, which is based on a representative and comprehensive number of business indicators, able bankers and merchants today do not only study height or length, but study *area*. That is, such men believe that the shaded portions *above* the average line of growth X-Y, shown in the plot, should approximately equal in *area* the shaded portion *below* said line. Thus, if the country is

enjoying a condition of only medium activity, prosperous conditions may be expected to extend over a longer time than if tremendous prosperity now abounds, and vice versa.*

All Subjects Must Be Considered

The second great error heretofore made by these economists consisted in the fact that each man seemed to focus his attention on only one or two subjects, instead of making a composite interpretation of all. Some would study bank clearings, some foreign trade, others gold movements and so on, believing that, as the figures on their particular pet subject or subjects changed, it was possible to forecast future conditions. Many still believe it is possible to utilize certain subjects in this way, but all such systems are absolutely wrong. No one of these subjects, when studied independently, serves to foretell the great changes in conditions which have occurred since 1860. Some of the subjects seem to work out better than others, but all of them entirely fail to give proper warning in all instances.†

*See "Cours d'Economie Politique," by Vilfredo Pareto, Vol. II.

†For illustration, "gold movements" formerly was used as one of the very best barometers of future conditions. During heavy imports of gold (such as occurred in 1878-1882) the United States enjoyed unparalleled prosperity and after said imports declined and the exports of gold exceeded the imports (as in 1882-1883) followed the panic of 1884. This same rule worked most admirably in forecasting the prosperous times of 1888-1890, the panic of 1893, and the prosperous times of 1898-1902. The rule, however, did not work in forecasting the panic of 1903 nor the prosperous years following, and the heaviest imports of gold the United States ever enjoyed preceded the panic of 1907. Of course the reason for these huge imports in 1906-1907 is now well understood; but any one, who in 1906 simply studied the bare figures, without knowing that such importations were artificial, would have been justified in expecting that 1907 and 1908 would be years of great prosperity. On the other hand, such an error would not have been possible if a study had simultaneously been made of the other leading subjects.

However, a study of all these subjects reveals the fact that there has not been a single case when a change in conditions has not been fully and plainly foretold by a *majority* of these subjects.

Four general rules can be worked out for each subject—one rule for each of the four periods of prosperity, decline, depression and improvement, respectively. These rules are given in detail for each of the subjects under the twelve headings, in Chapters VI, VII and VIII. The basis of these rules is that very high figures, such as appear during very prosperous conditions, foretell a panic or period of decline. Very low figures, such as appear during a depression, foretell a period of improvement.

General Considerations

From the foregoing it is evident that it is better to reduce all figures to a single summary plot, in order to ascertain the “*area*” above or below the average line X-Y, although the separate charts on the different subjects may be again referred to as a check and interpreted in accordance with the laws just outlined. If both the Compositplot and the individual interpretations foretell the same change, this change may surely be expected to come to pass; while if both do not foretell the same change, one may assume that *at this moment* conditions are uncertain, although a little later this uncertainty may not exist.

This practically completes the diagnosis, although as a further study, it is interesting to refer back to

previous history and ascertain what changes, after such conditions as exist today, have followed in the past. This is accomplished by referring back to points in the various past business cycles when (1) the same area above or below the average line existed as exists today; and (2) when a majority of the individual subjects foretold the same conditions which they foretell today.

In connection with this study there is a certain sequence of events which is a distinct aid to bankers, merchants and investors. This sequence is similar to the various stages of disease with which physicians are so familiar. Sometimes one stage of the disease "runs" longer than usual; *but the sequence is always the same*. In the same way, it is not always possible to judge correctly the exact duration of each period of increase or decline in prices; but by a study of fundamental statistics it is always possible to ascertain approximately in which of the following periods we are. If, for instance, a study of fundamental conditions shows us to be in a period of increasing money rates, we know that we shall pass through the following cycle before we shall again enter a period of increasing money rates. This cycle is as follows:

- | | | |
|-----------------------------|-----------|-------------------------------------|
| Increasing Real Est. Prices | 10 | 1 Increasing Money Rates |
| Increasing Com. Prices | 9 | 2 Declining Bond Prices |
| Increasing Stock Prices | 8 | 3 Declining Stock Prices |
| Increasing Bond Prices | 7 | 4 Declining Com. Prices |
| Low Money Rates | 6 | 5 Declining Real Est. Prices |

The prices of stocks continue to rise after the prices of bonds begin to fall. Industry, as a whole, generally follows several months behind stock prices. The prices of commodities generally stop rising at about the time business reaches its height. Interest rates are likely to continue to rise until the prices of land values have declined sharply. This latter event usually completes the decline in prices that precedes and accompanies a panic. Conditions in other countries and crop conditions in this country also have much to do with the date and extent of these periods.

In short, this study of fundamental statistics consists simply in ascertaining present conditions and interpreting them with the view of forecasting future conditions. It is like the work of a physician when he examines a man for life insurance. The physician first ascertains the man's present conditions and his mode of life. Applying his knowledge based on previous history of what usually follows such conditions, he makes a forecast of the man's probable length of life. That action and reaction are equal and that history usually repeats itself is the foundation of both the science of medicine and the great business of life insurance. These fundamental principles apply equally in the field of economics and hence the merchant and the investor should give the subject of fundamental statistics his most careful attention and consideration.

The Mechanical Work

In the first portion of this book is described the meaning of fundamental statistics and their use. In this chapter is outlined the theory underlying the work and the reason why such statistics may be depended upon. Now a few words must be given to explaining the mechanical work of compiling and reducing these figures to one single "Summary Barometer Figure" such as is the basis of the Compositplot.

In approaching the work, although other methods may seem sufficient, the need of direct and definite results leads the student to seek a systematic, comprehensive and uniform practice, so that a basis of comparison from period to period may be established at the outset. The course usually followed by the leading bankers, merchants and investors when studying fundamental statistics is to collect data covering a long period of years, and relating to such subjects as the following, which are grouped under twelve headings.

These twelve headings correspond almost identically with the twelve subjects mentioned in Chapter I.

- I. *Building and Real Estate.*
 Building Operations (with fire losses).
- II. *Bank Clearings.*
 Total Bank Clearings of the United States.
 Bank Clearings of the United States, excluding New York City.

III. Business Failures.

Tables on number of failures, amount of liabilities, and ratios.

IV. Labor Conditions.

Tables of immigration figures and notes on the general situation.

V. Money Conditions.

Money in Circulation.

Comptroller's Reports. (This is the only one of the twenty-five subjects for which no figures can be obtained monthly.)

Weekly Statements of the New York Banks.

Weekly Statements of Reporting Member Banks.

Weekly Statements of the Federal Reserve Banks.

VI. Foreign Trade.

Imports of Merchandise into the United States.

- Exports of Merchandise from the United States.

Balance and Volume of Trade.

VII. Gold Movements.

Gold Movements, with tables on the exports, the imports and the balance of gold movements.

Domestic and Foreign Money Rates and Foreign Exchange, with tables on the rates in London, Paris and Berlin.

VIII. Commodity Prices.

Production of Gold. (Tables giving the

production in the Transvaal Mines which best show the trend in the production of the entire world.) Prices of Commodities, including wheat, corn, cotton, iron, copper, etc.

IX. *Investment Market.*

Stock Exchange Transactions. Tables on number of shares traded in, the bond sales, and the high and low prices of the ten leading investment stocks given in Chapter II. The latter tables contain the high and low prices for each year since 1859, and the high and low for the current year.

New Securities. Tables for the new securities listed on the New York Stock Exchange and figures relative to other issues publicly offered or authorized, but as yet unlisted.

X. *Crops and Commodity Statistics.*

Crop Conditions and Production of commodities, including pig-iron and copper.

XI. *Railroad Earnings.*

Gross and Net Earnings per mile, with annual figures for all railroads relative to the new mileage constructed, etc.

Idle Car Figures, for the current year and the corresponding months of the preceding two or three years.

XII. *Social Conditions.*

Political Factors.

Religious Statistics.

The figures on most of these subjects are kept upon large desk sheets, and may be divided into the above twelve sections. It has taken many years to accumulate these figures, as they represent tedious and careful research. They are the foundation of the entire work, and it is impossible to make practical use of fundamental statistics except in connection with these tables for preceding years and months.

The Compositplot

The subjects in the list above outlined are arranged so they may be grouped and classified under the three following headings:

1. *Tables used when studying mercantile conditions.*
2. *Tables used when studying monetary conditions.*
3. *Tables used when studying investment and other conditions.*

In detail this classification is as follows:

(These divisions are purely arbitrary, as every subject affects in some manner each of the three divisions.)

Mercantile Conditions.

Immigration.

New Building.

Failures.

Bank Clearings.

(And Similar Subjects.)

Monetary Conditions.

Commodity Prices.
Foreign Trade.
Foreign Money Rates.
Domestic Money Rates.
(And Similar Subjects.)

Investment Conditions.

Yield of Leading Crops.
Railroad Earnings.
Stock Market Conditions.
(And Similar Subjects.)

Investors and merchants who carefully study the figures on these subjects each week obtain one barometer figure for present conditions for each of the three groups given above. Then, by averaging the three figures, they obtain a final summary barometer figure for present conditions, on a principle similar to that used by the London Economist for combining and reducing the prices of a large number of commodities to one index figure. The Compositplot is really a graphic illustration of the statistics compiled and collated from the subjects under the twelve headings on the large desk sheets.

These statistics are gathered from a variety of authoritative sources and tabulated and kept up-to-date regularly each week. The figures appear in many denominations: for example, Bank Clearings are expressed in dollars, Crop Production in bushels, Immigration in number of people arriving, certain railroad statistics in dollars, etc. To combine all

these into one figure, it is necessary to do away with the different denominations and express all in one abstract figure, or index.*

Because business activity as measured by monthly figures fluctuates so widely, being at some times very much depressed and at other times greatly over-expanded, the line X-Y has been drawn through the plot to show the average line of growth of general business throughout the country. In short, this line represents the net gain made by the nation, a gain or loss as measured in dollars in the actual amount of business from year to year as against the monthly changes in business conditions registered by the

*To accomplish this, we introduce a set of intermediate figures called Scale Figures. The steps by which these Scale and Index Figures are obtained are as follows: Take, for instance, the Actual Figures for Immigration from 1901 to 1911, inclusive. The Actual Figure, 18,300, for January of the year 1901 was found to be the lowest for that month of the ten-year period and was placed at the lower end of the Scale Table for January. 56,200 (in 1905) was found to be the highest Actual Figure in January during the same time, and was therefore placed at the high end of the Scale Table. The difference between the two Actual Figures was 37,900, which was divided by 10, and the result, 3,790, added to 18,300 to make the second figure, 22,090, added again to that for the next, 25,880, and so on in arithmetical progression up to 56,200, the highest Actual Figure.

In February, the lowest Actual Figure was approximately 23,400 in 1908; the highest, 68,700, in 1906. The difference, 45,300, divided by 10, equals 4,530, which added to 23,400 gives 27,930, and, successively, the other figures opposite February. Working out each month in the same manner, we have as a result a table which is called the Scale Table on Immigration. This table gives a scale for each month in which the left and right ends are Actual Figures, and the figures between, proportional or mathematically graded figures. These are what we mean by Scale Figures.

We then arrange the Scale Figures in columns, placing zero over the column whose average approximates most closely to the average conditions of the years 1903 and 1904,—that is, the depression following the 1903 panic. This date is taken arbitrarily as the starting point of the Barometer. We then place the other Index Figures in series to the left and right of zero. If the volume of business increases, so as to go beyond the scales, higher scale figures are added, using the same arithmetical progression as at first, so that the actual condition of the years 1901-1911 serves as a *constant* by which to compare succeeding years. Scales similar to this one on Immigration have been prepared for all the subjects, and with these in hand, we are prepared to combine our figures and prepare a Compositplot. By having a separate scale for each month, the *seasonal* fluctuations are eliminated.

Moreover, persons using different scales would obtain similar plots.

monthly barometer figure as shown in the outline of the Compositplot.

As economists differ in their definitions of wealth, so statisticians differ in their selection of the basis upon which to draw this line. For both the economist and statistician the most interesting and most satisfactory subjects for study are the Census Reports on the growth of manufactures, farm values, mineral products, lumber cut, population, etc. But for the business man it is necessary to select another indicator of this growth because of the long periods of time elapsing between two census years. The business man needs to know how far the composite

Although their definite figures for each week or month would differ, yet the relation of one week to another should be identical.

A simple illustration of the way the scales are used is the following: Suppose domestic money rates are 4%. By referring to the money rates scale, we find that a 4% rate equals +20 on the index. +20, therefore, is the index figure, and since it is abstract, it can be combined with the index figures for all of the subjects. A similar process is performed with each of the other subjects.

In order to get a single index figure of general business conditions, we have simply to average the individual index figures together. In like manner, the figures may be grouped, as previously shown, into those indicating mercantile, monetary, and investment conditions, and a separate figure obtained for each group. It is the summary index figure, however, which all business men and investors watch most closely and it is this figure which is charted to form the Compositplot.

In reality it makes little difference what the definite scale figure is, provided the base is submitted therewith to use for comparative purposes; for it is a fact that if a number of different statisticians with different scales which started at different times, should plot their summary figures, all the plots would look alike and the relation of the different areas above and below the average lines would be the same. In other words, different men with different scales would obtain different summary barometer figures for a *definite date*; but the *relation* between their figures would be the same always, and this is the only vital and important feature involved.

For this reason bankers, merchants and investors are justified in using the barometer figures worked out by a central agency and thus avoiding the difficulty and expense involved in working out such figures for themselves. Moreover, as such a central agency continually plots these summary barometer figures, today it is only necessary for the up-to-date business man to refer to the plot furnished by the central agency and keep in absolute touch with the area being consumed on the present cycle. He then can independently forecast for himself: (1) In what period we are today; (2) The duration of the present period; (3) Whether the next period will be a period of prosperity, a period of depression, or an intermediate period. Is not this information about all the able banker, merchant or investor needs?

line of business is above or below a normal line and how much of a given area has passed, in order to know what to expect from the present conditions of fundamental factors. After considerable study of the different subjects, it seems clear that the subject most successful as an *indicator*, from this practical point of view, is the volume of bank clearings* for the country, excluding New York. (New York is excluded because its clearings represent so large a proportion of the entire figure that they hide the true industrial conditions shown by the remaining cities.)

*We, however, recognize that this indicator is not wholly satisfactory. First, because the increasing use of checks tends to make too high a level for a line of normal growth; second, because the new Federal Reserve Banks are eliminating many bank clearings (this tending in the opposite direction); third, clearings are affected by price changes as well as by actual quantity of goods moved. The subject, however, has still great value because: (1) Bank clearings from all over the country are reported more frequently and thoroughly than any other statistics; and (2) Clearings are sure to rise and fall as business contracts or expands.

But as it is always dangerous to use one subject alone, especially a subject reflecting surface movements, it is necessary to take bank clearings as an indicator only, and to check conclusions based upon it, at the end of each year, by all the important barometers of wealth which report annually; and again, at the end of each cycle, by the areas of the Compositplot. Thus far we have been able to rely on our statistics alone in locating this X-Y line, but we frankly assume that the areas should be equal. Therefore this chart does not prove that the law of action and reaction applies to business, but rather assumes it.

There are now two complete cycles on the Compositplot. The first (Areas B and C) runs from 1905 to 1909. The second (D and E) runs from 1909 to the latter part of 1915. In the first cycle the X-Y line was arbitrarily drawn to make Areas B and C approximately equal, its course following the trend of bank clearings. Since then, however, the line has been mathematically located on the following basis: the line X-Y runs through +24 of the scale at the end of 1905 and through +27 at the end of 1908. Compared with clearings outside of New York, the line between these dates rises 3 points for 6% increase in clearings, or $\frac{1}{2}$ a point for every 1% increase in clearings. Therefore for subsequent years the line X-Y, as determined by clearings, is raised at the same ratio. We use a horizontal dotted line until a fair estimate of the total clearings of the year can be made; but this dotted line should at all times be regarded as subject to change according to what clearings show. Furthermore, if at any time a majority of subjects on the Desk Sheet show that clearings are expanding or contracting too much, the line may be modified accordingly. Whenever a distinct cycle appears to have been completed and statistics have been received regarding its course, the line may again be revised, the object always being to keep its slope true to conditions of actual net growth in order that the amount of area consumed above or below the line may always be known as accurately as possible.

The location of this line is fundamentally based on the assumption that action and reaction are equal when the total force involved is considered, which force may be expressed graphically by an area. If this assumption is correct, the sum of the areas below the line of normal growth must approximately be equal to the sum of the areas above this same line; and by the law of averages all the areas tend to be approximately equal. In other words, if the law of action and reaction is applicable in economics as in every other science, then our line is located with sufficient correctness; on the other hand, if this law of action and reaction does not apply to economics, then of course the Area Theory cannot be relied upon for forecasting business changes and these areas are of use simply as a general bird's eye view of conditions. *At the end of the last cycle, however, no readjustment was necessary to make Areas D and E equal. This fact is a most interesting testimonial for the Area Theory.*

The solid red line represents the average price of certain stocks during the past years and the dotted red line, the average yield of bonds. Although during these years the stock line has discounted the black area, yet this cannot be depended upon, as previous to 1903 there were instances when the black area rose and fell first. Therefore, the only safe method is to study both of these together, giving the most weight to the black plots. Moreover, it should be remembered that the areas usually refer only to periods in our *minor* cycles and not

to the major cycles extending over about twenty years. Hence we may be in a *prosperous* period of a *minor* cycle and still be in a *declining* period of a *major* cycle.

Although the main use of the barometer figures is to plot the "area" mentioned earlier in this chapter, the figures themselves are also useful. Practically speaking, they are mathematically correct. If, during a period of depression, the final barometer figures for a long period of weeks show a continuous but slow increase, the country is usually facing improved conditions, however poor business may appear to the average merchant. On the other hand, during a period of prosperity, if the barometer figure for surface conditions continues to increase abnormally, there is likely to be a change for the worse at any time.

The fundamental principle to be remembered, however, concerning the Area Theory is as follows: If X-Y truly represents the normal development of the nation's business, and if the black areas truly represent the actual course, then the sums of the areas above and below the line X-Y must, over sufficiently long periods of time, be equal.

Monthly Interpretations

But in addition to collecting figures to deduce barometer figures therefrom, some merchants and bankers have the monthly figures on each of the

twenty-five or more subjects mentioned above, interpreted* each month for what they signify.

Such interpretations are made in accordance with the rules given in Chapters VI, VII and VIII, and show how many subjects signify a "Continued Improvement," how many signify "No Improvement" and how many signify "No Change." Figures on the majority of the necessary subjects can be obtained not oftener than monthly, and therefore final totals need be studied in detail but once each month. If there has been a normal growth or change,—sometimes a favorable showing requires an increase or sometimes a decrease,—the figures on a given subject are considered as signifying satisfactory conditions; but if a growth or a change is

*The interpreting of these figures is greatly simplified by the following arrangement:—*Monthly* figures on the various subjects, and their subdivisions, for the last ten years, are tabulated on desk sheets before mentioned. These figures are brought up to date once a month. *Annual* figures on most of these subjects since 1860 can also be obtained, being brought up to date every year.

In addition, however, to having the figures in such sheet form (thus always enabling the banker, merchant or investor to have before him a bird's-eye view of the situation), it is also desirable to have the definite figures for each month with a comparison with figures for the same month of the previous year on a separate sheet. This shows one at a glance whether the new figures for the current month on each subject show an increase or a decrease. As soon as this is ascertained one may refer to the rules and know what this increase or decrease signifies. As each subject is interpreted in this way, the different interpretations should be recorded and a final summary made. This summary should show how many of the subjects signify continued improvement; how many signify no improvement; how many signify caution, and how many signify no change.

As this work is purely mechanical, there is no reason why bankers, merchants and investors cannot also depend upon a central agency for preparing these comparisons in the form of a monthly report. When this is done the work is tremendously simplified for any student of fundamental statistics. Therefore not only may arrangements be made for collecting the original figures, as they appear from day to day, and as they have appeared in the past, and for having them reduced to barometer figures and plotted—the first feature of the work; but arrangements can also be made to have them tabulated in sheet form and interpreted once a month. This, therefore, eliminates all mechanical work on the part of any bank, firm or individual, and it is only necessary for one to note the summary plot together with the interpretations once a week, and take a general view of the tables whenever convenient. Upon so doing, one automatically makes a forecast of future mercantile, monetary or investment conditions.

not normal, the figures are considered as showing unsatisfactory conditions. In other words, satisfactory conditions require a *normal* change and figures of much less than normal or much more than normal are considered unsatisfactory.

The whole industrial organization of the country is governed by the law that reaction equals action. In a rapidly growing country like America, the figures to be normal *must increase in proportion to the increase in the wealth, population and activity of the country*. Great increases or great decreases are distinctly abnormal and are always significant of a marked change; a change for the better in time of depression, when present conditions are very unsatisfactory; or a change for the worse during a period of prosperity, when present conditions are apparently very satisfactory.

As an illustration, however, of how the leading financial papers fail to recognize this principle, the following from an editorial of October 9, 1909, in what the writer considers America's most valuable financial weekly, is of interest:

"It seems inconceivable folly to argue in favor of further meddling. If a man should protest, with sorrowful anxiety, that his bodily vigor is so great that he is really in fear about his future, and should forthwith set to ransacking the market for proprietary nostrums to keep himself regulated, he would be rated wanting in good sense. But what is a nation except a mass of persons, and is prosperity a matter to be anxious about or to be afraid of? The very question sounds absurd. Nevertheless, in a speech, on entering California this week, our worthy President, after sounding the pean of coming prosperity as loudly as language could do it, added that the difficulty is that whenever everybody is prosperous, when everybody is comfortable, then is the time when our old friend Satan steps in and helps along the evil cause; then is the time when we are apt to be inert and enjoy the things we have, without looking forward in the future and seeing that the evils will grow and ultimately swamp us."

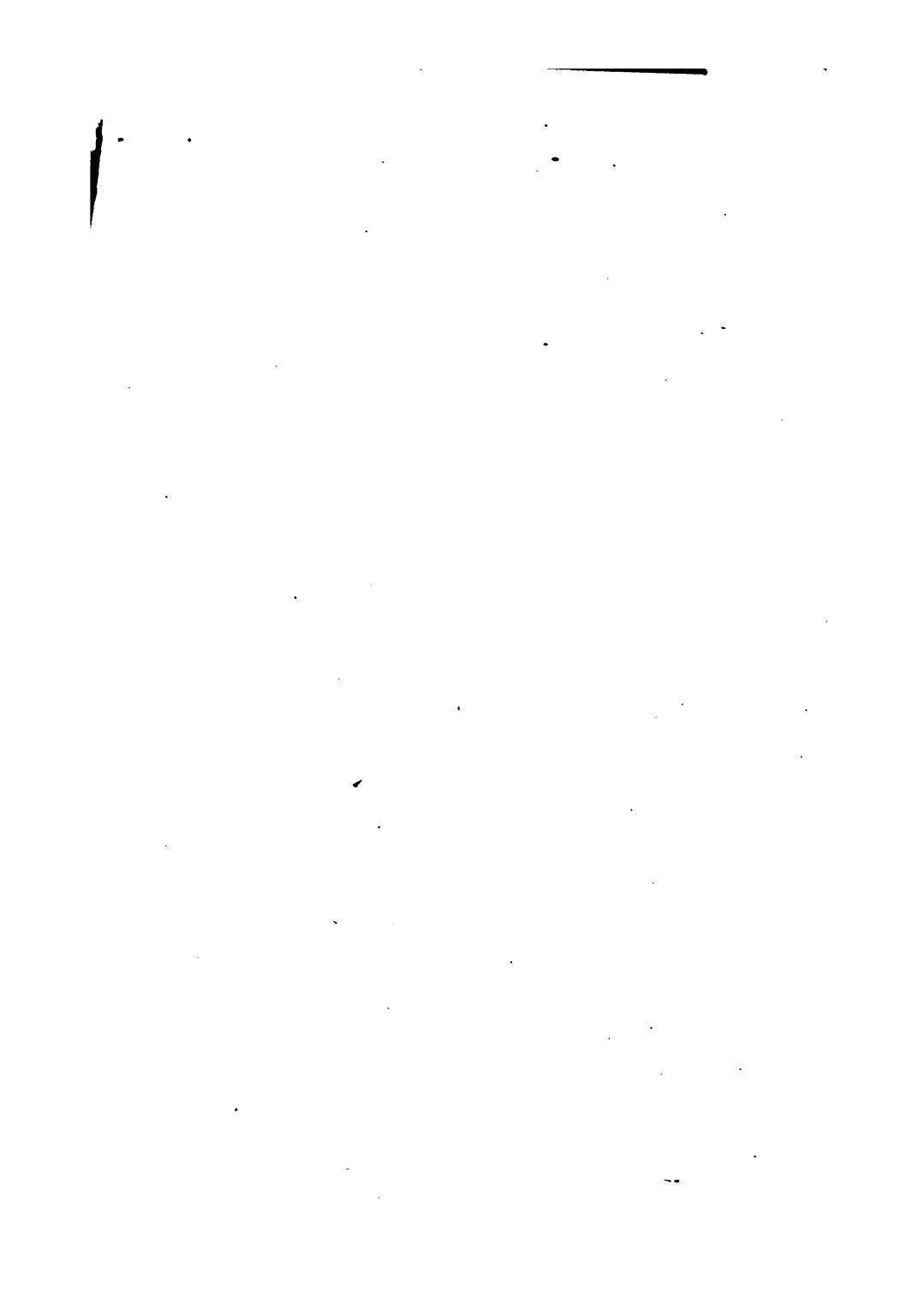
Of course, our President was right and our esteemed contemporary wrong. Great prosperity

is a matter to be feared. When a man or a nation is in a *normal* condition, there may be nothing to be anxious about; but when a man or a nation *overworks* or "lives too high," or in any way becomes strained or careless, trouble is sure to follow.

This same principle is illustrated by interest rates.* For instance, when interest rates gradually increase and surplus reserves gradually decrease after a period of depression, the combination is significant of improved present conditions; when commercial paper is discounted at $3\frac{1}{2}\%$, one may always be sure that the country is not prosperous, that many factories are idle and many men out of work. As the mills resume operation and as business becomes more active, money rates increase and surplus reserves decrease, all of which is shown by higher barometer figures for monetary conditions. Then, as money rates increase too much, and the surplus reserves decrease to very low figures, the change is significant of unsatisfactory future conditions. In other words, when money rates are *below* normal it shows business is *dull*, but may be better; and when money rates are *above* normal, it shows that business is good, but will soon be worse.

Of course if this data were obtained by each investor, merchant or banking house independently, it would require a force of clerks to collect, analyze and sort the mass of figures; but as the data may now be obtained from a central agency, all of the

*See the very valuable book on this subject by Professor Irving Fisher of Yale University: *The Rate of Interest*; The Macmillan Co.



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drudgery is eliminated. The investor or merchant may simply note the barometer figures as they are made up each week, thus keeping in constant touch with conditions; and by reference to the monthly figures once a month, these conditions may then be interpreted in accordance with the rules mentioned. Moreover, the average banker, merchant or investor is satisfied to depend upon the Compositplot, barometer figures and reports furnished by this central agency, simply making a personal detailed examination at desired intervals.

However, no matter what the time and money expended in studying fundamental conditions, the investigator always finds the subject absorbingly interesting, the more so because such studies indicate what may be expected of the future.

If, during a period of depression, uncertainty and discouragement, the Compositplot and individual charts show distinctly that the country is about to enter a period of prosperity, investors buy stocks, merchants buy goods, and bankers extend loans. The result is that, when prosperity returns, such investors and merchants find that they have purchased very much below the prevailing prices and obtain many times the profit that they otherwise would.

On the other hand, during a period of great prosperity and extravagance, when everybody is buying goods or securities and there is a general increase of indebtedness, if the Compositplot and the other charts foretell a change for the worse, investors sell their securities for cash, merchants reduce their

merchandise and outstanding credits, and bankers reduce loans or place a large part of them "on call." These statistics, therefore, both serve as an insurance against loss and also enable men to be prepared to take advantage of the very low prices which are sure to prevail during the formation of an area of depression below the line of normal growth.

Note.—Regarding the effect of War on the Business Cycle, see Appendix, page 438.

BABSON'S BUSIN

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1900	Jan	1	10:00	St. Paul	St. Paul vs. Minneapolis	St. Paul 10-0
1900	Jan	2	10:00	St. Paul	St. Paul vs. Minneapolis	St. Paul 10-0
1900	Jan	3	10:00	St. Paul	St. Paul vs. Minneapolis	St. Paul 10-0
1900	Jan	4	10:00	St. Paul	St. Paul vs. Minneapolis	St. Paul 10-0
1900	Jan	5	10:00	St. Paul	St. Paul vs. Minneapolis	St. Paul 10-0
1900	Jan	6	10:00	St. Paul	St. Paul vs. Minneapolis	St. Paul 10-0
1900	Jan	7	10:00	St. Paul	St. Paul vs. Minneapolis	St. Paul 10-0
1900	Jan	8	10:00	St. Paul	St. Paul vs. Minneapolis	St. Paul 10-0
1900	Jan	9	10:00	St. Paul	St. Paul vs. Minneapolis	St. Paul 10-0
1900	Jan	10	10:00	St. Paul	St. Paul vs. Minneapolis	St. Paul 10-0
1900	Jan	11	10:00	St. Paul	St. Paul vs. Minneapolis	St. Paul 10-0
1900	Jan	12	10:00	St. Paul	St. Paul vs. Minneapolis	St. Paul 10-0
1900	Jan	13	10:00	St. Paul	St. Paul vs. Minneapolis	St. Paul 10-0
1900	Jan	14	10:00	St. Paul	St. Paul vs. Minneapolis	St. Paul 10-0
1900	Jan	15	10:00	St. Paul	St. Paul vs. Minneapolis	St. Paul 10-0
1900	Jan	16	10:00	St. Paul	St. Paul vs. Minneapolis	St. Paul 10-0
1900	Jan	17	10:00	St. Paul	St. Paul vs. Minneapolis	St. Paul 10-0
1900	Jan	18	10:00	St. Paul	St. Paul vs. Minneapolis	St. Paul 10-0
1900	Jan	19	10:00	St. Paul	St. Paul vs. Minneapolis	St. Paul 10-0
1900	Jan	20	10:00	St. Paul	St. Paul vs. Minneapolis	St. Paul 10-0
1900	Jan	21	10:00	St. Paul	St. Paul vs. Minneapolis	St. Paul 10-0
1900	Jan	22	10:00	St. Paul	St. Paul vs. Minneapolis	St. Paul 10-0
1900	Jan	23	10:00	St. Paul	St. Paul vs. Minneapolis	St. Paul 10-0
1900	Jan	24	10:00	St. Paul	St. Paul vs. Minneapolis	St. Paul 10-0
1900	Jan	25	10:00	St. Paul	St. Paul vs. Minneapolis	St. Paul 10-0
1900	Jan	26	10:00	St. Paul	St. Paul vs. Minneapolis	St. Paul 10-0
1900	Jan	27	10:00	St. Paul	St. Paul vs. Minneapolis	St. Paul 10-0
1900	Jan	28	10:00	St. Paul	St. Paul vs. Minneapolis	St. Paul 10-0
1900	Jan	29	10:00	St. Paul	St. Paul vs. Minneapolis	St. Paul 10-0
1900	Jan	30	10:00	St. Paul	St. Paul vs. Minneapolis	St. Paul 10-0
1900	Jan	31	10:00	St. Paul	St. Paul vs. Minneapolis	St. Paul 10-0

CHAPTER V

CONDITIONS AND EVENTS SINCE 1860

1860

THOUGH this year ended in a panic, the comparatively favorable conditions existing during the first six or eight months account for the fact that many of its figures are about normal. New railroad construction amounted to 1,846 miles; while 821,223 tons of pig-iron were produced at an average price of \$22.70 per ton. Bank clearings amounted to more than \$7,231,000,000. The number of failures was 3,676 with total liabilities of \$79,807,000. Wages in general were high; and 150,237 immigrants entered the country.

With money rates high throughout the year, conditions became particularly strained in November, when for the first time in the history of the country, clearing house certificates were issued. The total volume of foreign trade amounted to more than \$681,000,000 with a considerably unfavorable balance. The index of English commodity prices for the year was 2,713.

On the stock exchange, prices were generally low. Certain conservative stocks rose from 59 in the spring to 93 in the fall. The production of wheat amounted to about 173,000,000 bushels at \$1.37 per bushel; that of corn amounted to about 838,700,000 bushels at 73 cents per bushel; and that of cotton amounted to 3,849,469 bales at 11 cents per lb. Panic conditions began in November with the election of

Lincoln to the Presidency and the subsequent action of the Southern States towards secession.

1861

The depression existing at the end of 1860 continued through the first six months of this year. Only 660 miles of new railroad were constructed; and only 653,164 tons of pig-iron were produced at an average price of \$20.26 per ton. Bank clearings decreased to the very low figure of \$5,915,742,000. Failures amounted to 6,993 in number, with liabilities of \$207,210,000. Wages continued high, while only 89,724 immigrants came into the country.

Money conditions were marked by high rates which dropped somewhat with the improving conditions of the last six months of the year, by a further issue of clearing house certificates, and by a suspension of specie payments. The total volume of foreign trade decreased to about \$500,000,000. The index of English prices for the year was 2,751.

Prices on the stock market were low throughout the year. Certain stocks, selling at 84 early in the year dropped to 62 in the fall. The production of wheat and corn decreased considerably. The number of bales of cotton amounted to 4,500,000. Wheat sold at \$1.30, corn at 60 cents, and cotton at 13 cents. In March the Morrill Tariff Act was passed, levying heavier duties and giving an impetus to mercantile and manufacturing conditions. Thus, in spite of the beginning of the Civil War, conditions improved steadily after the middle of the year.

1862

This year shows a marked improvement over 1861. While only 834 miles of new railroad were constructed, 703,270 tons of pig-iron were produced at an increased price of \$23.92. Bank clearings rose to \$6,871,443,000. Failures amounted to only 1,652 in number, with \$23,049,000 of liabilities, and 89,000 immigrants entered the country.

In money matters, currency was considerably inflated by paper issues and money rates were lower. The progress toward improved conditions was marked by a low volume of foreign trade amounting to about \$380,000,000. The index of English commodity prices was 2,878.

Transactions in the stock market increased and prices rose steadily. Certain stocks sold for 71 in the spring and for 107 in the fall. Railroads prospered. Among the crops, cotton production amounted to 1,600,000 bales at \$.31 per lb.; while wheat sold at \$1.28 a bushel and corn at \$.60 a bushel. The most significant political feature of the year was the development of the policy of a heavy war tariff for revenue purposes.

1863

This was a year of prosperity. There were 1,050 miles of new railroad constructed, and 846,000 tons of iron produced at about \$35 per ton. The bank clearings increased to about \$14,800,000,000, and failures decreased to 495, with liabilities of only \$7,900,000. Immigration amounted to 174,000.

Money conditions were temporarily aided by

measures of Congress providing for a further currency inflation, and gold exportation was increased considerably. Foreign trade increased to over \$447,000,000. The English index of prices was 3,492 as against 2,878 for the preceding year.

On the stock exchange a fever of speculation brought about a considerable increase in transactions and an advance in prices. Certain stocks rose from 106 in the spring to 153 in the fall. Wheat sold for \$1.16 and corn for \$.84; 450,000 bales of cotton were produced at an average price of \$.67 per lb. Railroad earnings increased and the first horse car line was constructed in New York. Congress passed the Internal Revenue Act to increase the war revenue. In general the Northern troops were successful.

1864

Prosperity conditions, at full height in the beginning of the year, showed marked evidences of instability in the last months. Only 738 miles of new road were constructed, while pig-iron production amounted to 1,014,282 tons, and the price rose to the phenomenal point of \$59 per ton. Bank clearings nearly doubled those of the preceding year amounting to more than \$24,000,000,000. Failures increased slightly to 520 in number with liabilities of \$8,579,000, while immigration amounted to about 175,000.

Inflation of currency and exportations of gold continued to an abnormal degree and money rates rose. Foreign trade increased to over \$475,000,000. The index of English prices was 3,787.

Before the end of the year, prospects as indicated by these abnormal figures and conditions strained by the corner in connection with the stock of the Harlem River R.R., appeared so unsatisfactory that many began to sell their stocks. Average prices of securities for the year were higher than in 1863. Certain stocks, selling at about 150 in January, rose to 177 in April, fell to 141 in October and rose again to 155 in December. Cotton production amounted to about 300,000 bales selling at the extraordinary price of \$1.00 per lb. Wheat sold at \$2.00 per bushel and corn at \$1.44 per bushel. The general condition of inflation was marked further by high wages and increased dividend payments by railroads. In politics, Lincoln was re-elected to the Presidency.

1865

Conditions were unstable and unsatisfactory during this year. While 1,177 miles of new road were constructed, the production of pig-iron decreased sharply to 831,770 tons, selling at \$46 a ton. Bank clearings increased slightly to \$26,000,000,000. Failures numbered 530 with liabilities of \$17,625,000. The number of immigrants increased to 247,453.

Money rates remained high, but did not increase. Paper money issues were somewhat contracted and reserves were increased. Foreign trade fell off to about \$400,000,000, and the index of English commodity prices dropped to 3,575.

On the stock exchange, the price of several stocks fell from about 160 in the spring to 125 later in the

year. Railroad earnings were erratic in behavior. The production of cotton jumped up to 2,269,316 bales, selling at \$.83 per lb.; while wheat and corn were at \$2.04 and \$1.26 per bushel respectively. Conditions steadily declining during the first of the year improved somewhat with the surrender of Lee, but became unsteady again with the death of Lincoln. The year was, on the whole, one of panic.

1866

Depression followed the panic of the previous year. 1,716 miles of new railroad were constructed, while 1,205,663 tons of pig-iron were produced at a price of \$46.84 per ton. Bank clearings increased slightly to \$28,717,000,000. Business failures increased 300% amounting to 1,505 in number, with liabilities of \$53,783,000. Immigrants coming to the country amounted to 314,917.

Banking conditions were rather more settled, and money became easier with the close of the war and the slight improvement in fundamental conditions. Foreign trade increased to more than \$780,000,000 and exports of gold somewhat decreased. Commodity prices in general were low. The English index figure was 3,564.

In the stock market, the decline in prices of the preceding year continued. The average for certain stocks went as low as 99 and as high as 128. The first official crop report of the national government gave a production of about 152,000,000 bushels of wheat sold at \$2.20; 867,946,000 bushels of corn sold at \$.90 per bushel, and 2,097,254 bales of cotton

sold at \$.43 per lb. Though, as shown by these figures, fundamental conditions appeared to be somewhat improving, still the surface conditions especially evident in the action of the stock market were decidedly depressed.

1867

During this year, though depression still existed, improvement was plainly visible. There were 2,449 miles of new railroad constructed, and 1,305,023 tons of pig-iron produced at \$44.08 per ton. Bank clearings amounted to \$28,675,159,000 and failures increased to 2,780 with liabilities of \$97,000,000. Immigration amounted to 310,965.

Monetary conditions showed a slight improvement over those of the previous year. Gold exportations decreased and rates were somewhat lower. Foreign trade amounted to \$681,615,000 in volume with a balance of \$61,337,308 of imports. The English commodity price index was 3,024.

On the stock market, the price of the seven stocks ranged from 100 to 122. Railroad earnings improved. 2,519,554 bales of cotton sold at \$.31 per lb.; 768,320,000 bushels of corn sold at \$1.21 per bushel; and 212,441,400 bushels of wheat, a considerable increase over the previous year, sold at \$3.33 per bushel. Confidence was strengthened by the purchase of Alaska and by the opening of new territories in anticipation of the coming prosperity.

1868

This was a year of marked prosperity. New railroad construction increased to 2,979 miles; and

1,431,250 tons of iron were produced at \$39.25 per ton. Bank clearings amounted to \$28,484,288,000. The number of failures decreased to 2,608 with total liabilities of \$63,694,000; and the number of immigrants decreased to 138,840.

Money rates were slightly higher. The excess of gold exports amounted to \$51,217,027, or five millions more than that of the previous year. The volume of foreign trade amounted to \$649,328,000, with a balance in favor of imports amounting to \$87,000,000. The English commodity price index was 2,682.

The market became active. Certain stocks rose from 108 to 144. While the cotton crop was much the same as that of the previous year, the wheat crop increased to 224,036,000 bushels selling at \$2.43 per bushel; and the corn crop increased to 906,527,000 bushels selling at \$1.23 per bushel. While general conditions were thus improving, the prices of stocks and the conditions of the stock market were rendered uncertain by the great contest being waged between Drew and Vanderbilt for control of the Erie, in which the former won virtually by loading an issue of convertible bonds upon the Erie, and then immediately converting the bonds. This and certain other unfortunate incidents left the fundamental conditions of the stock market at the end of the year quite unsatisfactory.

1869

This was the year of the "Black Friday" panic, a panic of the stock market which, in spite of pros-

perity in other branches of business, served to render conditions unsound. Miles of new railroad amounted to 4,615, and 1,711,287 tons of pig-iron were produced at \$40.61 per ton. Bank clearings increased to \$37,407,028,000. Failures numbered 2,799 with liabilities increased to \$75,054,000. The number of immigrants increased to 352,768.

The money market was affected somewhat by the manipulations of the stock market. Money rates though firm were high. The excess of gold exportations decreased to only \$17,990,000, while the balance of trade in favor of imports increased to \$101,079,906. The English commodity price index was 2,666.

On the market, the stocks, at 144 in the early summer, fell to 114 in the fall. The Union Pacific was completed and railroad earnings in general were good. In crops there were 3,000,000 bales of cotton at \$.29 per lb.; 874,000,000 bushels of corn at \$1.02, and 260,146,900 bushels of wheat at \$1.50. With the general conditions of prosperity came a great westward movement. As was the case, however, with the Harlem corner in 1864, the "Black Friday" panic of this year seemed to create a wound that would not heal, so that although business continued to increase and surface conditions appeared to be more favorable, fundamental conditions grew more and more unsatisfactory every day. The leading bankers and merchants who were studying these underlying conditions and watching the relation between actual and normal figures, disposed of their securities and reduced their merchandise.

1870

Prosperity continued through this year in spite of the unsatisfactory monetary conditions at the close of 1869. There were 6,070 miles of new road constructed, and 1,665,000 tons of iron produced at \$33.23 per ton. Bank clearings, to be sure, declined to \$27,804,000,000; and failures increased in number to 3,546; but wages were high and immigration amounted to 387,000.

In the money market, rates remained firm, although money was easier than it had been in the preceding year. The excess of gold exports amounted to \$42,673,184, while the excess of imports of merchandise decreased to \$57,546,000, and the volume of foreign trade was \$864,718,000. The English commodity price index was 2,689.

The stock market, though steady, dropped during the year, so that the stocks selling for 120 in the first part of the year were selling at about 102 later. Wheat was somewhat decreased in both price and production as compared with 1869; but a phenomenal corn crop, amounting to 1,094,255,000 bushels, sold at \$1.02; and the cotton crop increased to 4,352,317 bales, selling at \$.239 per lb. The year as a whole was looked upon by the business men as prosperous.

1871

In this year the miles of new railroad amounted to 7,379, while 1,706,793 tons of iron were produced at \$35 a ton. Bank clearings rose to \$29,300,000,000. The number of failures fell to only 2,915,

with liabilities of \$85,000,000. The number of immigrants during the year was 321,350.

Monetary matters showed the effects of the weakening underlying conditions. Money was not as easy as in the preceding year. The excess of gold exports amounted to \$39,074,000; while the volume of foreign trade amounted to \$1,033,463,000, with an excess of imports of \$112,759,000. The English commodity price index for the year was 2,590.

On the stock exchange, stocks rose during the year from 103 to 117. Railroad gross earnings per mile were \$9,040, an unusually high figure. Crops were not as good as those of the preceding year. Cotton amounted to less than 3,000,000 bales selling at \$.169 per lb., corn to 991,898,000 bushels selling at \$.77, and wheat to 230,722,400 bushels selling at \$1.60. Added to the decline in crops were other factors which hastened panic conditions which were soon to follow. The Chicago fire, coming in this year, shook confidence and helped to increase money rates. In political circles much corruption sprang up; and the Tweed Ring exposures produced a still further disquietude and lack of confidence.

1872

The general decline which had begun in 1871 was in this year somewhat checked by a number of causes. New construction declined to the more nearly normal figure of 5,878 miles; and the production of iron increased to 2,548,000 tons selling at about \$49. This great increase of iron production

was probably due to the perfection of commercial methods of making Bessemer and open hearth steel, greatly increasing the demand for all grades of pig-iron, but especially the lower grades. Bank clearings increased to \$33,844,000,000. Failures numbered 4,000 with \$121,000,000 of liabilities. More than 400,000 immigrants came to this country.

Money conditions were not altogether satisfactory. The banks were carrying a very small surplus reserve. The excess of exports of gold increased to more than \$57,000,000. The volume of foreign trade amounted to \$1,124,802,000, with an excess of imports amounting to \$187,000,000. The English commodity price index was 2,835.

Speculation was active on the stock exchange. Certain stocks dropped from about 110 to about 97. Gross railroad earnings per mile fell to \$8,116. Crops were rather better than in the preceding year, but money rates were higher. Money was not easy, wages were high and strikes were disturbing confidence. In politics a revision of the tariff and a presidential election made conditions still more uncertain. Although this was a year of apparent prosperity, students of fundamental statistics, who had not already done so, now saw that the area of prosperity was practically consumed, and immediately liquidated.

1873

The Boston Fire of November, 1872, precipitated the panic which overwhelmed the business world in this year. New construction declined to 4,097 miles, though iron production increased slightly to

2,560,000 tons and sold at \$42.79 a ton. Bank clearings rose to \$35,461,052,000. Business failures increased to 5,000, with liabilities over \$100,000,000 more than those of the year before. More than 450,000 immigrants came into the country.

Monetary matters were so unsatisfactory, and bank failures were so serious that clearing house certificates had to be issued. The excess of gold exports decreased from \$57,000,000 to less than \$5,000,000; while in volume foreign trade increased to \$1,163,000,000 and in excess of imports it decreased to \$27,000,000. The English commodity price index rose to 2,947.

On the stock exchange panic conditions were even more evident than elsewhere. Stocks fell as low as 75. Gross railroad earnings declined to \$7,947 per mile. Crops were fair. The cotton production amounted to 4,000,000 bales and sold at \$.20 per lb. Corn production amounted to 932,000,000 bushels, and wheat to 281,000,000 bushels; and sold at \$.63 and \$1.76 respectively. Money rates were very high, being 7% in New York for time loans. The Pacific Railroads, opened in the year 1869, were largely owned in New England and the promoters of both State Street and Wall Street had been borrowing money heavily of the insurance companies. These loans the insurance companies were now obliged to call. Moreover, the preceding year was the culmination of the Erie tragedy when James Fiske was shot and Erie stocks were struck from the New York Stock Exchange. Money had been very high in 1872 and men of affairs clearly

saw at the beginning of 1873 that it would be impossible to continue business under existing conditions and that a house cleaning would be necessary. Consequently, when crop reports continued to point to small harvests, which later turned out to be about 100,000,000 bushels less than the preceding year, and when the number of failures showed a distinct increase, things were allowed to seek their own level. That is, the large bankers and merchants withdrew their support and business began to decrease immediately.

Conditions at this time are interesting to study as they show clearly the three steps in the progress of a decline and the precipitation of a crisis: *first*, the large bankers and merchants sell their securities and reduce their merchandise, while the public is very optimistic; *second*, after some special event has taken place, in this case the Boston fire, which convinces these bankers and great merchants that the time has come for a house cleaning, they withdraw their support, although the people are still bullish and the ordinary store-keeper is borrowing money to buy goods; and *third* comes the panic itself, which in the case of the great panic of 1873 caused the failure of Jay Cooke & Co., and many other firms. This panic made imperative the closing of the New York Stock Exchange from September 18th to the 30th. This third step is the beginning of the decline in the eyes of the ordinary merchant, manufacturer and laborer. And in reality, until this third phase comes, there is no decline in surface conditions, although fundamental con-

ditions have been unsatisfactory for a year or more, during which time bankers and merchants who study fundamental conditions have been preparing for the depression.

1874

In this year panic passed into depression. New railroad construction declined to 2,117 miles; and the production of pig-iron fell off somewhat, to 2,400,000 tons selling at only \$30. Bank clearings declined to \$22,900,000,000. Failures increased in number to 5,830; and immigration declined to 313,000 persons.

Surplus reserves in the banks increased. Gold exports showed an excess of \$35,700,000 over imports; and of a total volume of foreign trade amounting to \$1,131,988,000; exports exceeded imports by \$7,700,000. The English index figure for commodity prices was 2,891.

Conservative stocks rose from the 75 of the preceding year to 100 in the summer of this year, only to fall back to 93 in December. Gross railroad earnings per mile fell off to \$7,513. Many roads were in the hands of receivers, and railway affairs were shaken by adverse legislation. Crops declined to a total for corn and wheat of 1,158,251,-200 bushels. Granger laws, political investigations and the prosecution of certain prominent promoters, tended to place a check on the growth of public confidence.

1875

Depression continued throughout this year, and in fact through the succeeding four years. Only 1,711

miles of railroad were constructed, the smallest number in ten years; and iron production dropped to 2,000,000 tons with the price at \$25 a ton. Bank clearings showed a slight increase, amounting to \$25,000,000,000. Failures, however, increased in number to 7,740 and in liabilities to \$201,000,000. Immigration declined still further to 227,000.

In monetary matters, the excess of gold exports was \$39,000,000; the balance of trade was again "in our favor" to the amount of \$7,784,000 though the volume of trade had declined to \$1,014,100,000. The index figure for English commodity prices was 2,778.

On the stock exchange stocks were irregular and declining in price. Stocks averaged 100 high and 87 low. Gross railroad earnings amounted to \$7,010 per mile, showing a considerable falling off, and both the Erie and the Wabash defaulted interest on their bonds. Money continued high and confidence was greatly upset. The crops, however, were much better than in the preceding year. Cotton production amounted to 4,632,313 bales at \$.154 per lb. Corn amounted to 1,321,069,000 bushels at \$.84; and wheat amounted to 292,136,000 bushels at \$1.33. This fact of better crops together with the business depression, relieved the money market somewhat, and rates gradually decreased.

1876

In this year the depression reached its low ebb. Liquidation was very thorough. New construc-

tion, to be sure, rose somewhat to 2,712 miles; but iron production decreased to 1,869,000 tons selling at \$22.19 per ton. Bank clearings declined to only \$21,597,000,000. Failures rose to 9,092 in number with liabilities of \$191,117,786; and immigration declined to 169,986.

Owing to the thorough liquidation, money was becoming easier. Only \$7,555,000 of gold was exported in excess of imports; and in foreign trade the decline in volume to \$1,018,000,000 was due to a decline in imports which raised the excess of exports to \$163,319,000. The English commodity price index was 2,711.

The tendency of the stock market was downward. Stocks, selling at 100 in the spring, dropped to 62 in the winter. Railroad earnings continued their decline to a gross per mile of \$6,764. Crops were about the same as the year before in yield, with prices slightly lower. Money rates in New York on time loans had declined to 5%; and abroad, to 3½%. In politics the Presidential election and the Hayes-Tilden dispute disturbed confidence. In fact, the public had become very much discouraged. All who had been connected with stocks had lost their money, prominent bankers and merchants had failed, railroads were carrying traffic at a loss, mills and factories were idle. Money rates were less than at any time since 1860.

These facts showed that the pendulum had swung too far. But knowing that business conditions are like the pendulum which, after wide swings in either direction, tends to resume a normal position in re-

sponse to the laws of gravity, investors and merchants who were studying the conditions and comparing figures saw clearly that this was the year in which to buy stocks, make plans for further extensions, and prepare for the period of improved conditions which was bound to come. In fact, the stocks which these investors sold at an average of 160 a share in 1869, many now purchased at an average of 73 a share, while others who waited until the beginning of the following year purchased at an average price of 54.

*1877

Though the depression continued, improvement in underlying conditions was well under way. New railroad construction amounted to 2,280 miles; and pig-iron production increased to 2,066,000 tons, selling at \$18.92. Failures remained about the same in number as in the preceding year. Strikes were common owing to reductions in wages, and immigration continued its decline in numbers to 141,000.

In monetary matters the excess of gold exports decreased to \$7,352,000; while the volume of foreign trade increased slightly, and the excess of exports decreased to \$140,000,000. Commodity prices, as indicated by the Economist's index figure, declined to 2,715.

On the stock exchange,* stocks dropped during the spring and summer to 54, but began to rise in the fall, selling at 75 in December. Gross rail-

* See page 33.

road earnings per mile declined to \$6,380; and net per mile to \$2,307. Crops were good: 4,773,865 bales of cotton sold at \$.118 per lb.; 1,342,000,000 bushels of corn sold at \$.59 per bushel; and 364,194,000 bushels of wheat sold at \$1.63 per bushel. In politics, the silver agitation, as usual with all currency disputes, tended to retard improvement. But though the country was in extreme depression at the beginning of the year, still, with the good crops, railroad earnings and confidence improved, and money rates gradually decreasing, Christmas, 1877, was a time of thanksgiving for many who had escaped being crushed during the preceding five years.

1878

In spite of the signs of improvement in the year preceding, this year, though continuing the improvement, was still in depression. New construction increased to 2,629 miles; and iron production rose to 2,301,000 tons with the price per ton at \$17.00. Bank clearings declined slightly to \$23,289,000,000. Failures increased in number to 10,478, and in liabilities to \$234,000,000. Immigration declined still further to the low point of 138,000.

Monetary affairs reflected the improvement which was under way. The volume of foreign trade remained the same as in the preceding year; but the excess of exports increased to \$305,000,000, and the gold movements showed an excess of imports amounting to \$1,822,000. The London Economist's commodity figure of 2,554 indicated the

general tendency of commodity prices to remain low.

The stock market was still unsteady and inactive. Only 39,875,000 shares were traded on the New York Exchange. Stocks rose from 69 in the spring to 82 in July. Net railroad earnings per mile, however, showed an increase to \$2,375. The crops of corn and cotton were about the same as those of the preceding year; while the wheat crop increased to 420,000,000 bushels and dropped in price to \$1.24 per bushel. In politics, the silver dispute was continued over the Bland-Allison bill; and certain changes were made in the Bankruptcy Law. On the whole, the confidence of the public and of the business world was returning.

1879

During this year, depression passed into prosperity. New construction jumped to 4,746 miles; and iron production increased to 2,741,000 tons, selling at \$21.72. Bank clearings increased to \$29,000,000,000. Failures decreased remarkably to 6,658 in number, and only \$98,149,000 in liabilities. Immigration increased somewhat to 177,800 in number.

In the field of money, the volume of foreign trade increased to \$1,278,762,000, the excess of exports amounted to \$251,557,000 and the excess of gold imports to \$74,652,000. Commodity prices were still low. The English index figure for the year was 2,225.

On the stock market, the stocks rallied from

69 to 104, and transactions nearly doubled. Net railroad earnings increased to \$2,610 per mile. Crops were as follows: cotton, 5,755,000 bales selling at \$.108 per lb.; corn, 1,547,000,000 bushels selling at \$.47 per bushel; and wheat 459,000,000 bushels selling at \$1.24 per bushel. In New York, time loan money rates were at 5%, and in Europe, at 3%. In accordance with the Specie Payments Act of 1875, specie payments were again resumed in this year. In fact, the entire year witnessed an improvement so marked that at the end of the twelve months, mills were in full operation, all labor was employed, and the entire country was in a very prosperous condition.

1880

This was the first of a series of four years of marked prosperity. New railroad construction increased to 6,876 miles, and pig-iron production amounted to almost 4,000,000 tons selling at \$28 a ton. Bank clearings jumped to \$37,000,000,000. Failures decreased still further to only 4,735 in number or .63 of 1% of all the firms in business, with one exception the lowest point on record. The number of immigrant arrivals increased to 457,000.

In money matters, the volume of foreign trade increased to \$1,586,490,000, and the balance "in favor of" the United States amounted to \$192,876,000. Excess of gold imports amounted to \$70,582,000. Commodity prices improved as illustrated by the English index figure of 2,577. The average surplus reserve of the New York banks declined from \$6,800,000 in 1879 to \$6,100,000 in this year.

On the New York Stock Exchange, transactions increased from 72,000,000 to almost 98,000,000 shares. The stocks rose from 99 to 123. Net railroad earnings increased to \$3,029 per mile. Crops were excellent; 6,606,000 bales of cotton selling at \$.115 per lb.; 1,717,434,000 bushels of corn selling at \$.55 per bushel and 498,000,000 bushels of wheat selling at \$1.30 per bushel. Confidence reigned throughout the country; consolidations were in progress; new industries were started; new railroads were projected; and every one was elated over the fact that the country was once more prosperous. Moreover, Garfield, the candidate for the Republican party, always representative of business interests, was elected President in November. Money was constantly in more demand, and the rates were gradually increasing.

1881

Although the general public considered this year one of great prosperity, there were certain events which caused the barometers of fundamental conditions to begin to decline, and before the year closed, said fundamental conditions were unsatisfactory. Thus, new construction rose to the abnormal figure of 9,778 miles; while production of pig-iron increased slightly and the price declined. Clearings jumped to more than \$48,000,000,000. Failures increased in number to 5,582. The number of immigrant arrivals amounted to 669,431.

Money conditions, too, were not altogether satisfactory. The volume of foreign trade decreased slightly, and the balance "in favor of"

the country decreased as did the excess of gold imports. In the New York banks the surplus reserve fell to \$4,500,000. Commodity prices were somewhat lower as indicated by the English index figure of 2,376.

Transactions on the New York Stock Exchange amounted to more than 114,000,000 shares. Stocks selling at an average price of 125 in January, rose to 134 in June, and fell again to 121 in December. Railroad net earnings declined slightly to \$2,928 per mile, being due in part to the Trunk Line Rate War. Money rates abroad increased to 4% and at home to 6% on time loans. The crops decreased considerably in yield, wheat and corn together amounting to less than 1,600,000,000 bushels. Tremendous stock issues were being floated, and large stock dividends were being declared. While to outsiders everything appeared to be very prosperous, yet to the careful student it was plain that conditions were not what they should be, and needed only some sudden disturbing event to start disaster, such an event as the Harlem corner in 1864 and the Boston fire in 1872. This sudden event turned out to be the shooting of President Garfield on July 2, 1881, after which event, the bankers and merchants who kept careful watch of conditions decided to sell.

1882

Fortunately for those who had not already liquidated, prosperous conditions continued in many of the important lines during this year and the

next. New railroad construction amounted to 11,599 miles, or next to the largest new mileage for any year in the history of the country; and iron production was correspondingly inflated to 4,623,323 tons, selling at \$25.77 per ton. Bank clearings decreased slightly to \$46,500,000,000. Failures numbered 6,738, with liabilities of \$101,547,564. Immigration rose to the abnormal figure of 788,992.

Monetary matters were also uncertain. Gold movements showed a return of excess of exports amounting to more than \$25,000,000; while the volume of foreign trade increased to \$1,520,000,000 and the excess of exports declined to \$15,138,000. The surplus reserve of the New York banks declined still lower than in 1881, to \$3,500,000. The London Economist's commodity price figure for the year was 2,435.

On the New York Stock Exchange, transactions increased to 116,300,000 shares. Nine stocks fell to a low point of 113 in the early summer and rose again to 126 in August. Railroad earnings decreased to a net per mile of \$2,670. Crops, however, the real redeeming feature of the year, were better than in 1881. The cotton crop of 6,950,000 bales sold at \$.115 per lb. Corn amounting to 1,617,000,000 bushels, sold at \$.77 and wheat, amounting to 504,000,000 bushels, sold at \$1.32 per bushel. Owing chiefly to these crops, although a decline had set in, it was not perceived by the general public. As mentioned in the account of the year 1873, there are three steps in every decline; and the second, that in which the leaders

withdraw their support, had not come, for this was the year in which Jay Gould made his famous exhibit of securities. As will be seen by referring to the newspapers of that day, it was clearly understood by students of conditions that a distinct decline had begun, and Gould probably knew this as well as any man. Therefore, although he was preaching that the conditions were perfectly sound and that still greater prosperity was ahead, he himself was doubtless unloading and liquidating with all possible speed in preparation for the public withdrawal of his support later. Moreover, the banks were aiding their directors by keeping down money rates although the demand for money was very great. Students of fundamental statistics, however, could not be misled, and knowing that the area of prosperity was rapidly being consumed, prepared for trouble.

1883

Though nominally considered a year of prosperity, this was in truth a year of decline and instability of underlying conditions. New construction fell off to 6,818 miles, and iron production to 4,595,000 tons. Bank clearings in this year, for the first time published for the whole country instead of for New York alone, amounted to \$51,731,472,000. Failures increased in number to 9,184 and in liabilities to \$172,800,000. Immigration also showed a decline.

Money conditions were supported by a volume of foreign trade amounting to \$1,480,275,000. The balance in favor of this country increased to

\$108,000,000, and excess of gold imports due to gold purchases from abroad amounted to \$16,000,000. The New York bank reserves were still low, being about \$4,200,000. The English commodity price index fell to 2,343.

The stock market held up remarkably well, although the high prices were maintained only through manipulation and in order to allow the insiders the opportunity to liquidate. Stocks fell from 119 to 109. Railroad earnings increased slightly both in gross and net. Money rates in New York averaged $6\frac{1}{2}\%$ and in Europe, $3\frac{1}{2}\%$. Crops, too, were poorer than in the preceding year, the yield of wheat and corn combined amounting to less than 2,000,000,000 bushels. On the whole, these facts, added to agitation over tariff and internal revenue questions, rendered business conditions abnormal and unsound, and clearly foretold the panic about to follow.

1884

The unsound conditions of the preceding year were reduced, in this year, to *panic* conditions by the great Ward and Grant failure on May 6, together with the failures of Henry Villard and James R. Keene. New construction declined to 3,973 miles, and iron production was reduced by about 500,000 tons. Bank clearings decreased to \$44,000,000,000. Failures rose to 10,968 in number, with \$226,000,000 of liabilities. Immigration also declined to 500,000 in number.

In foreign trade, both exports and imports

decreased. The balance "in favor of" this country was \$120,000,000; but gold movements showed an excess of exports amounting to \$12,990,000. The New York banks held a large surplus reserve of \$20,800,000. Commodity prices fell as illustrated by the English index figure of 2,195.

On the stock market, artificial support being removed from money conditions, stock prices fell rapidly. Stocks sold at 113 in February, and 85 in the winter months. Net railroad earnings declined to \$2,318 per mile. Crops, however, were again good, corn and wheat amounting to over 2,300,000,000 bushels. If it had not been for the good crop reports during this year, probably stocks would have declined very much further. As it was, even the election of Grover Cleveland by the Democrats in November did not seem to break the market very severely.

1885

Depression, as usual, followed the panic, in this year. Only 3,131 miles of new railroad were constructed; and iron production declined to 4,044,000 tons, selling at \$18. Bank clearings declined to the low figure of \$41,474,000,000. Failures were slightly lower than in 1884 both in number and in liabilities. Immigration figures declined to 395,346.

In monetary matters, the volume of foreign trade decreased to \$1,276,118,000 and the balance "in favor of" the country decreased to \$100,000,000. Gold movements showed an excess of imports of \$12,200,000. The average surplus reserves in the New York banks rose to the enormous sum of

\$48,000,000. The English commodity price index was 2,023.

The stock market was comparatively active. Stocks rose from 86 to 111. There was a considerable issue of new stocks and bonds amounting together to \$567,500,000. Railroad earnings dropped to the low figure of \$2,185 net per mile. Money rates in New York dropped from 6% to 5½% on time loans. The crops were rather better than in the preceding year, but prices were considerably lower. In politics, the silver agitation rather increased the general weight of depression which existed throughout the year.

1886

General depression continued in this year, though improvement was well under way before its close. New construction jumped up to 8,018 miles; while iron production increased to 5,683,000 tons, selling at \$18.70. Bank clearings, too, increased to \$49,000,000,000 and failures decreased somewhat both in number and in liabilities. Immigration decreased slightly to 334,203.

In the monetary field money was easier. The volume of foreign trade remained about the same; but the balance between exports and imports of both gold and commodities was much reduced. The abnormal average surplus reserve of the New York banks in 1885 was in this year reduced to \$14,200,000. Commodity prices in general were the same as indicated by the English index figure of 2,023.

The New York Stock Exchange was active during

this year. Transactions amounted to more than 100,000,000 shares, and stocks rose from 106 to 118. Money rates in New York dropped to 4% and the banks began pretty generally to buy bonds. Railroad earnings improved both in gross and net; and crops were about the same as in the preceding year in yield, but somewhat lower in prices. Cotton sold for \$.092 per lb., corn for \$.52 per bushel and wheat for \$.89 per bushel. A period of improvement had commenced, and although many small merchants were only beginning to feel the effects of the great depression, true conditions were distinctly more than normal and the pendulum was swinging too far the other way. In view of this, stocks began to rally and plans for extensions and large undertakings were again discussed. Moreover, the defeat of the various bills which were introduced into Congress for the reduction of the tariff caused a special increase of confidence among manufacturers, wholesalers and bankers. Money rates also, remaining normal, greatly encouraged new enterprises.

1887

This year ushered in a new period of prosperity. New railroad construction amounted to 12,983 miles, the largest figure in the history of the country; while pig-iron production increased to 6,417,148 tons selling at \$21 a ton. Bank clearings rose to \$51,000,000,000, and failures amounted in number to 9,634 or .90 of 1% of all the firms in business. Impelled by the tide of prosperity, immigration increased to 490,000.

The volume of foreign trade also showed a marked increase due chiefly to an increase in imports, as is generally the case in a period of prosperity. Consequently the balance of trade favoring exports decreased to \$6,000,000; but the excess of gold imports increased to \$35,700,000. Surplus reserves were still further reduced, and prices began to rise. The London Economist's commodity index for the year was 2,087.

The stock market was rather less active than in the preceding year, and the prices of stocks fell from 125 to 112 in the summer and fall, owing probably in part to the approaching presidential election and the doubt and hesitation which is always reflected in business circles with the approach of this process in politics. But railroad earnings improved, the net per mile being \$2,444, and money rates were normal. Moreover, while the yields of corn and wheat together amounted to less than 2,000,000,000 bushels, the cotton yield increased from 6,500,000 bales of the year before, to 7,000,000 in this year. In politics, government control of railroads was inaugurated in this year by the passing of the Interstate Commerce Act.

1888

Owing to satisfactory fundamental conditions, prosperity made rapid progress in this year in spite of the fact that it was a "presidential year." New construction amounted to 7,066 miles, and iron production increased slightly to 6,489,000 tons. Bank clearings were about normal at \$49,541,000,000;

and failures, though increased in numbers, were decreased in total liabilities. The number of immigrant arrivals increased to 546,000.

Monetary conditions were interesting. While exports decreased, imports increased and the total volume of foreign trade decreased to \$1,417,000,000. Consequently there was at the end of the year a balance of trade "unfavorable" to the United States amounting to \$33,600,000 and a resulting excess exportation of gold amounting to \$23,500,000. Domestic money rates remained at 5%, but surplus reserves in New York banks increased to an average reserve of \$17,000,000. The English index figure for commodity prices rose to 2,458.

The inactivity of the stock market during this year can probably, as in the fall of 1887, be ascribed largely to the approaching presidential election. Early in the year, stocks stood at a low point of 113, after the election they bounded up to 126 in December. In fact, with the election of the Republican candidate, General Harrison, business in general showed a marked improvement. The net railroad earnings for the year amounted to \$2,045 per mile, a low figure. Total crops, too, showed no great increase, though the total wheat and corn crops amounted to 2,400,000,000 bushels.

1889

This was a year of prosperity. New railroad construction was normal at 5,695 miles; while iron production increased to 7,600,000 tons selling at \$17.76 a ton. Bank clearings rose to \$56,000,000,000, and

failures increased somewhat. Immigration declined to 444,000.

In monetary affairs, the volume of trade was only slightly larger than in the preceding year; but the balance turned again "in favor of" this country amounting to an excess of exports equal to \$56,584,000. Exportations of gold, however, continued to exceed imports, in this year, by \$38,900,000. Surplus reserves of the banks were somewhat below normal. As indicated by the index figure of the London Economist, which was 2,362 for this year, commodity prices had somewhat dropped.

On the stock exchange, transactions showed an increase. Stocks rose from 123 in the spring to 136 in the fall. Domestic time loan rates continued at 5%, while those abroad were at 3%. The net earnings of railroads still remained low. Crops, however, were excellent, especially those of corn and cotton, which were the largest in the history of the country thus far. The cotton crop of 7,472,511 bales sold at \$.106 per lb.; the corn crop of 2,112,892,000 bushels sold at \$.44 per bushel; and the wheat crop of 490,560,000 bushels sold at \$.91.

1890

In this year, sound prosperity changed to an "uncertain prosperity," which was to continue for two years longer, during which time, while surface conditions looked satisfactory, fundamental conditions were far from sound. New construction amounted to 5,656 miles, and pig-iron production increased to 9,000,000 tons, selling at \$18. Bank

clearings also rose to \$60,800,000,000, and failures increased only slightly. Immigration showed little change.

In monetary matters, the volume of foreign trade increased to \$1,680,000,000 and the excess of exports amounted to \$34,000,000. Exports of gold exceeded imports by only \$3,600,000. Surplus reserves in the New York banks fell to the low average figure of \$3,700,000. The English commodity price index figure, 2,247, shows a still further drop in prices.

The stock market conditions were peculiar. Railroad earnings rose to a net per mile of \$2,162. The cotton crop was unusually large, amounting to 8,600,000 bales; but the wheat and corn crops fell off considerably, amounting together to only 1,900,000,000 bushels. Money rates in this country rose to 6% and abroad to 4%. Ten stocks which remained above 130 until the fall, suddenly dropped then to 118. This drop marked what may be called a "surface panic," brought on by the great Baring Failure at which time clearing house certificates were issued to relieve the pressure on the banks. Public confidence and courage, greatly agitated by this panic, was still further disturbed during the year by the political discussions which ended in the passing of the McKinley Tariff Act and the Silver Purchase Act.

1891

In spite of the generally favorable surface conditions of this year, confidence was not fully restored.

New railroad construction decreased to 4,620 miles and pig-iron production fell off nearly a million tons. Bank clearings also declined to \$56,700,000,000; and failures increased to 12,273 in number with liabilities of \$189,868,000. Immigration increased to 560,319.

Foreign trade continued to develop, amounting in volume to \$1,798,830,000 with a balance of \$142,000,000 in favor of the United States. Gold exports increased correspondingly to an excess over imports of \$34,000,000. Surplus reserves in the New York banks rose to \$11,000,000. The English index figure of commodity prices declined to 2,207.

On the stock market, the listing of new securities, which had amounted to the large figure of \$1,122,800,000 in 1890, declined in this year to \$476,500,000. The Exchange was dull. Ten stocks sold around 115 until the late summer, when they rose to 128. Railroad earnings remained much the same as in the year preceding. Crops, however, were phenomenally large. The cotton crop of 9,000,000 bales sold at \$.086 per lb. The corn crop of 2,000,000,000 bushels sold at \$.67 per bushel. The wheat crop of 611,000,000 bushels sold at \$1.05 per bushel. These fine crops caused the newspapers to be especially bullish, and enabled bankers and merchants to keep money rates from advancing further and to bolster up the market in order to unload their securities and merchandise. In fact, most people believed this a very satisfactory year. Students of fundamental statistics, however, clearly saw that the area of prosperity was about consumed and prepared for trouble.

1892

The prosperity of this year, so-called, was largely due to artificial causes. New construction amounted to only 4,584 miles, while the production of pig-iron rose to more than 9,000,000 tons and its price fell off to \$15.75 per ton. Bank clearings increased to \$62,011,000,000; failures declined in number to 10,344 and in liabilities to \$114,000,000, and immigration figures rose to 623,000.

In monetary matters, though the commodity exports exceeded imports by \$97,000,000, still there was an exportation of gold in excess of imports amounting to \$58,000,000. The New York banks' average surplus reserve amounted to \$15,600,000. Commodity prices in this country, as indicated by Bradstreet's index figure of \$7.77 which began in this year, were fairly high, while in England the index figure of 2,107 indicates that there they were low.

On the New York Stock Exchange, transactions increased to 85,000,000 shares. Ten stocks fluctuated between 126 and 135, beginning and ending the year at about 130. Net railroad earnings per mile declined to \$2,068. Crops were much smaller than in the preceding year, corn and wheat together amounting to less than 2,150,000,000 bushels. In short, it was clearly evident to students of fundamental statistics that the area of prosperity was more than consumed, and those who had not already liquidated, sold securities, merchandise and everything else possible in preparation for a period of depression to last until 1897.

1893

Questionable prosperity passed readily into panic with the great failure of the National Cordage Co. on the 4th of May. The collapse was complete. New construction dropped to 2,789 miles; and iron production amounted to only 7,000,000 tons. Bank clearings in like manner fell off to \$54,143,000,000; failures increased to 15,000 in number with liabilities of more than \$346,000,000; and immigration, though not so quickly affected as these other subjects, declined to 502,917.

In monetary affairs, both exports and imports of commodities declined; and while the excess of exports increased slightly to \$99,500,000, the excess of gold exports declined to \$6,700,000. The average surplus reserve of the New York banks increased to \$21,600,000. Bradstreet's index figure of American prices dropped to \$7.53, while the English figure rose slightly to 2,113.

The stock exchange was dull and, of course, declining. Ten stocks dropped from 135 to 102. Railroad earnings showed no particular change from the year before; but commercial paper rates in New York averaged 7%. Unfavorable crop reports, which had increased the collapsing tendency during the year, were fully substantiated by the final reports. To be sure, cotton was a little better than in the preceding year, and corn showed only a slight decline, but wheat had dropped off from 500,000,000 bushels to 396,000,000 bushels, selling at the decreased price of \$.739 a bushel. In fact, support of all kinds had been withdrawn, and every

commodity, including money, was allowed to seek its own level.

1894

In this year the inevitable period of depression following a severe panic began in earnest. New railroad construction declined to only 2,264 miles, and the production of iron amounted to only 6,600,000 tons. In like fashion bank clearings declined to \$45,460,000,000; failures were still high, at 13,885 in number, though liabilities decreased to \$172,900,000; and immigration declined to 314,467.

Monetary matters showed the same depression. The volume of foreign trade declined to \$1,501,415,000 while the excess of exports increased (through a decided decrease in imports) to \$150,000,000. Excess of gold exports jumped up to \$80,000,000 and bank reserves in the New York banks increased to \$45,900,000. Commodity index prices dropped in America to \$6.68 and in England to 2,002.

On the New York Stock Exchange only 49,000,000 shares were traded. The ten stocks rose to 115 in the spring and fell back again to about 106 in the winter. Railroad earnings fell to \$1,803 per mile, net, the lowest figure on record. Crops, too, were exceptionally poor. Cotton, to be sure, amounted to 9,900,000 bales in yield, but it sold at the low price of \$.069 per lb.; and corn and wheat together yielded less than 1,700,000,000 bushels. In reality this year witnessed the greatest crop failure in the history of the country. The crops

had fallen below 1,600,000,000 bushels during the '70s, yet a very much smaller area was then under cultivation and conditions were entirely different. As figures clearly show, a small increase or decrease in crops does not affect business excepting sentimentally; but a great failure such as was witnessed in 1894 gives the country a shock from which it may take several years to recover. In addition to the crop failures, the Pullman strike occurred in this year, and the Wilson bill affecting the tariff was also passed; in fact, 1894 was apparently the worst year since the Civil War.

1895

This year began in great gloom. The depression of the preceding two years, during which so many bankers and merchants had failed and one-third of the total railroad mileage of the United States had fallen into the hands of receivers, began to have its effects upon all labor and even upon the most humble storekeeper. Mills were shut down, great poverty existed in the cities, and distress was everywhere felt. New railroad construction declined to 1,938 miles. Iron production, however, had improved both in yield and in price, amounting to 9,000,000 tons and selling at \$13 a ton. Bank clearings, too, showed a gain to \$53,000,000,000; and failures decreased slightly in number. Only 279,948 immigrants entered the country.

The total volume of foreign trade showed a slight increase over the preceding year, but the balance "in favor of" the United States declined to \$23,-

000,000. Still, the gold exports continued in large amounts, exceeding the imports by \$70,500,000; and the surplus reserves, though reduced from the figures of the year before, were still high. Commodity prices were slightly lower than in 1894 in this country, and dropped somewhat in England.

The stock market was rather more active; but again the ten stocks rose from 105 in March to about 121 in September only to fall back to about 108 in the winter. Railroad earnings were \$1,804 per mile net, or practically the same as in 1894. But crops were somewhat improved. The cotton yield of 7,000,000 bales sold at \$.074 per lb.; the corn crop of 2,000,000,000 bushels sold at \$.477 per bushel; and the wheat crop of 467,000,000 bushels sold at \$.669 per bushel. And, added to the fair crops, there was the low domestic money rate of $3\frac{1}{2}\%$ to lend aid to an improvement. In fact, conditions would doubtless have taken a turn for the better had it not been for the very unfortunate condition of finance, and the great exportation of gold. Although President Cleveland did everything within his power to uphold the gold standard and the credit of the United States, the drain was too heavy, especially after his famous Venezuela message, and the threatened possibility of war with our greatest foreign creditor, England.

1896

This year business was still depressed from the panic of 1893 and the heavy gold exportations of 1894-5. New railroad construction declined to 2,067 miles, the low figure for the depression; and

iron production declined to 8,600,000 tons selling at \$13 a ton. Bank clearings decreased to \$51,000,000,000. Failures increased considerably to 15,000 in number with total liabilities of more than \$226,000,000. Immigration amounted to 343,267.

In monetary matters, the volume of foreign trade increased to \$1,687,000,000 and the excess of exports jumped up to \$324,000,000. In gold movements, imports exceeded exports \$46,400,000. The American index of commodity prices dropped to the low point of \$5.91.

The New York Stock Exchange was dull in transactions, but listed more than \$1,000,000,000 of new securities about equally divided between bonds and stocks. The ten stocks once more fluctuated between 113 and 99 in August. Railroad earnings increased to \$1,840 per mile net. Money rates on time loans in New York, owing to the currency troubles of the preceding year and the spring of this year, rose from 3% to 6%. Though the wheat crop itself declined somewhat, the total of corn and wheat amounted to more than 2,700,000,000 bushels and cotton yielded 8,000,000 bales. Therefore, although there were no signs of better times in surface conditions, fundamental conditions were becoming much sounder. Had it not been for the alarm felt at the Democratic nomination of Bryan in June, this would have been from its very beginning a year of distinct improvement; and when the election of McKinley in the fall of 1896 had removed this cause of distrust, bankers and merchants who were studying the situation became con-

vinced that a change for the better was imminent. In fact, it was evident from a study of fundamental statistics that the area of depression was about consumed, and a period of prosperity was due. They therefore purchased securities and merchandise in large quantities, and later made great profits thereby, as the major bear movement commencing in 1892 was at an end.

1897

Distinct improvement characterized this year. New railroad construction increased to 2,161 miles, and the production of pig-iron amounted to 9,600,000 tons. Bank clearings increased to \$57,000,000,000 and failures decreased in number from 1.31% of all the firms in business to 1.26%. Immigration amounted to 230,832.

Monetary matters were more sound. The foreign trade increased to \$1,842,000,000; and the excess of exports to \$357,000,000. Gold exports again exceeded imports but only to the small amount of \$253,000. Surplus reserves in the New York banks averaged the high figure of \$38,500,000. Commodity prices in this country rose as shown by Bradstreet's index figure of \$6.11.

The stock market was more active, but the ten stocks continued much the same range of fluctuations they had passed through in the last three years. Domestic money rates returned to the $3\frac{1}{4}\%$ of 1895, and railroad earnings continued to improve. Crops, too, remained strong. Though corn showed a decrease, wheat increased to 530,000,000 bushels

and cotton increased to 11,000,000 bales. The three sold respectively at \$.319, \$.954 and \$.07. When the Dingley Tariff Act had brought an end to anxiety in that field, it was discovered that the country was well on the road to prosperity.

1898

Everywhere prosperity reigned. New construction amounted to 3,199 miles, while iron production increased to 11,700,000 tons selling at \$12. Bank clearings jumped up to \$68,931,000,000; failures decreased to 12,000 in number; and 230,000 immigrants entered the country.

In monetary affairs, the volume of foreign trade still showed an increase due to the great increase in exports in spite of the fact that imports had somewhat declined. Exports which had amounted to only \$824,000,000 in 1895 had increased steadily with the improving crops until in this year they amounted to \$1,255,000,000 or rather more than two-thirds of the total volume. Imports of gold increased correspondingly to the immense figure of \$120,391,674. Surplus reserves showed a decline from the abnormally high figures of the preceding year. American commodity prices continued to rise as indicated by Bradstreet's index figure of \$6.57.

The New York Stock Exchange reported transactions amounting to 112,000,000 shares, and new securities listed amounting to \$1,228,000,000 of which \$700,000,000 were bonds. The ten stocks rose from a low point of 115 to a high point of 127 in

June. Net railroad earnings jumped up to \$2,111 per mile. Once more money rates were normal, time loans in New York averaging 4%. The crops, too, kept pace with the advancing prosperity, for cotton amounted to 11,200,000 bales, corn to 1,900,000,000 bushels, and wheat to 675,000,000 bushels. Although the Spanish War temporarily disarranged business, it was so short that it acted in the end as a great stimulus to trade.

1899

Conditions, already prosperous, continued to improve throughout this year. New mileage amounted to 4,500 miles; iron production advanced to 13,600,000 tons. Bank clearings showed a phenomenal growth to \$94,000,000,000, while failures decreased to 9,337 in number or only .81 of 1% of all the firms in business. The number of immigrants increased to 311,715.

Monetary conditions showed a similar strength. The volume of foreign trade amounted to more than \$2,000,000,000 and the balance sheets showed an excess of exports amounting to \$476,000,000. Money rates at home and abroad were 4%, and the excess of importation of gold amounted to only \$6,000,000. Commodity prices in this country and in England showed an increase as indicated by Bradstreet's index figure of \$7.21 and the Economist's figure of 1,973.

On the New York Stock Exchange, transactions increased to 176,000,000 shares, while the listing of new securities amounted again to nearly \$1,230,-

000,000. The ten stocks continued their rise from 126 to 144. Net railroad earnings increased to \$2,272 per mile. Though the cotton and wheat crops showed a decline, corn increased so that the total bushels of corn and wheat together again amounted to more than 2,600,000,000 in number. Industry in all lines was again firmly on its feet. In reaction against the cut-throat competition which had existed all through the depression just ended, and had thoroughly exasperated business interests, a great movement towards consolidation in industries and towards "integrating trusts" began in earnest with this burst of prosperity. In fact, this year saw the beginning of many of our largest trusts and monopolies in their present form of organization.

1900

With the turning of the century, prosperity was in full swing. To be sure some of the figures in the fundamental subjects showed a slight decline as compared with those of 1899, but this was rather a hopeful sign than otherwise for the prospects of the continuation of good times. Thus new railway construction declined to 4,157 miles while pig-iron production remained high at 13,789,000 tons selling at \$20 a ton. Bank clearings, too, declined to \$86,000,000,000, but this was still more than \$15,000,000,000 greater than the clearings of two years before. Failures numbered 10,700 with liabilities of \$138,495,000. Immigration increased to 448,570 in number.

In monetary matters, while the total volume of

trade advanced to \$2,300,000,000, the balance "in favor of" this country reached to \$648,800,000, the largest balance of this kind in the history of the country. Imports of gold exceeded exports by \$12,600,000. Bank reserves were normal. In commodity prices, Bradstreet's figure rose to \$7.88 and the Economist's to 2,178.

The stock market continued active in transactions but a smaller amount of new securities were listed. Though suffering the usual spring slump of this period, the ten stocks rose from a low point of 132 to a high point of 155. Net railroad earnings advanced to \$2,519 per mile. Domestic money rates strengthened to 5% on time loans. Crops were again firm both in yield and in price. Corn and wheat together amounted to 2,620,000,000 bushels and sold respectively at \$.804 and \$.453 per bushel. The reelection of McKinley and the enactment of the "Gold Standard" bill gave additional impetus to business. Everywhere consolidation was the rule, especially in the railroads, where "community of interests" was becoming common.

1901

Prosperity was running riot. New construction increased to 4,912 miles, while iron production advanced to 15,800,000 tons selling at \$16. Bank clearings bounded up to \$118,410,000,000 and failures remained about the same as in 1900. New immigrants increased somewhat in number to 487,900.

A slight increase came in the total volume of

foreign trade, but the excess of exports decreased somewhat. The latter fact was due to an increase in imports, and the excess of gold exports which came in this year amounted to \$3,000,000. Bank reserves were still about normal, though tending to decline. Commodity prices both in this country and in England declined as indicated by the respective index figures of \$7.57 and 2,014.

The activity of the stock market was extreme. On the New York Exchange more than 265,000,000 shares were traded, and more than \$2,565,000,000 of new securities were issued, of which the majority were stocks. This was the year when a partial panic in the market was caused by the Northern Pacific stock corner, and most stocks suffered from artificial manipulation. The ten stocks, which we have used heretofore, rose from 154 to 174 between January and November, 1900, but more active stocks continued the sharp advance begun in 1900, to May of 1901. Meanwhile net railroad earnings continued their increase to \$2,668 per mile; and money rates and crops remained strong. To be sure the corn crop decreased somewhat, but the wheat crop increased from 500,000,000 to 748,000,000 bushels. Still, fundamental conditions were not satisfactory, the "prosperity" area, as shown by the Compositplot, was nearly consumed, and the cautious investors were changing their positions to the "bear" side of the market.

1902

This was a year when the average business man and manufacturer were very optimistic; when the

daily papers were prophesying still higher prices and still greater activity, and when the surface conditions were apparently more satisfactory than ever before. Yet underlying conditions, especially those illustrated by the figures on "new securities issued," were far from sound. In fact, had it not been for gigantic crops, a severe depression would probably have set in at once. In mercantile conditions, new railroad construction amounted to 5,076 miles while iron production increased to 17,800,000 tons, selling at the advanced price of \$22 a ton. Bank clearings remained at about \$118,000,000,000 while failures remained abnormally low at 11,615 in number or only .93 of 1% of all the firms in business. Immigration increased to 648,743.

Monetary conditions showed a slight decrease in the total volume of trade; also a decrease to \$391,000,000 in the balance of exports, due, again, entirely to an increase in imports. Gold imports exceeded exports by \$8,000,000. Bank reserves were abnormally low, those of the New York banks averaging only \$10,700,000. American commodity prices showed a distinct gain indicated by Bradstreet's index figure of \$7.87, but English prices were falling.

The New York Stock Market, though not so active as in 1901, still reported transactions amounting to 188,000,000 shares, and new securities listed amounting to \$1,317,000,000. Thus in two years new securities had amounted to almost \$4,000,000,000. Men who recognized the meaning of this tremendous increase in new securities issued,

knew that a day of reckoning must come soon. Meanwhile, the ten stocks continued to rise from 170 to 190, but fell again to about 170 in December. Net railroad earnings continued to increase to \$2,830 per mile. A slightly decreased wheat crop was reinforced by an increase in corn amounting to 1,000,000,000 bushels, so that the total crop of wheat and corn amounted to more than 3,150,000,000 bushels. Cotton production increased about 1,000,000 bales over the previous year. But even these excellent figures could not save the unsound conditions of the money and stock markets. Furthermore, confidence was unsettled by severe anti-trust agitation and certain government prosecutions of trusts. These facts, together with a study of the Compositplot of fundamental conditions, clearly showed students of the situation that the area of prosperity was again consumed, and another depression was again imminent, although it was generally believed that this "area" represented only a minor movement, and that the major movement, beginning in 1897, was still upward.

1903

Shaken confidence and unstable stock market conditions resulted in the so-called "Undigested Securities Panic" of this year, in which few figures of fundamental subjects were radically altered except those directly related to the stock market. Thus new railroad construction advanced to 4,675 miles, and the production of pig-iron to 18,000,000 tons. Bank clearings declined to \$109,000,000,000. Fail-

ures decreased in number to 10,928 or .85% of all the firms in business. Immigration advanced to 857,000.

In monetary matters the volume of foreign trade advanced to \$2,480,000,000 and the balance "in favor of" this country amounted to \$489,000,000. Excess of gold imports increased to \$20,900,000. Bank reserves increased somewhat. American prices remained strong at \$7.92 and English prices strengthened.

On the New York Stock Exchange, transactions declined to 161,000,000 shares, but the issue of new securities continued to be large at \$1,008,000,000. In the past six years more than \$8,000,000,000 of new securities had been turned loose on the market. The ten stocks fell during the year from 180 to 146. Net railroad earnings per mile continued their steady increase to \$2,887. Crops declined to no great extent from those of 1902. In justice to those statisticians who found no signs forecasting a depression in this year, it must be said that these figures were not extremely unsatisfactory. In fact, had it not been for the very great increase in securities, there probably would have been no depression of 1903. However, owing to the stock market troubles, labor troubles, and certain other conditions, this year was one of depression.

1904

That the panic of 1903, like that of 1890, was not fundamental in its effects is pretty clearly shown by the fact that prosperity, not depression, followed

immediately in 1904. New railroad construction continued to increase to 5,003 miles, though iron production declined to 16,497,000 tons selling at \$15.50 a ton. Total bank clearings also increased to \$112,600,000,000; and failures increased slightly in actual numbers, and also in percentage of firms in business to .86 of 1%. Immigration almost held its own at 812,870.

Monetary matters showed firm banking conditions. The volume of foreign trade again increased and owing to a marked increase in imports and a slight decrease in exports, the balance "in favor of" the country decreased to \$415,000,000. Once more gold exports exceeded imports, in this year, by \$36,000,000. The average surplus reserve of the New York banks rose from \$12,000,000 to \$28,000,000. Commodity prices remained much the same as in 1903.

The stock market was again active, though the issue of new securities on the New York Exchange declined to \$710,900,000 of which more than \$500,000,000 was bonds. The forty stocks* rose again after their sharp decline in 1903. Net railroad earnings increased to \$2,989 per mile. Time loan rates dropped to 4% in this country and 3½% abroad. In crops, cotton amounted to the largest yield on record of 13,451,000 bales, selling at \$.117 per lb.; corn amounted to 2,467,000,000 bushels, selling at \$.594 per bushel; and wheat amounted to 552,000,000 bushels, selling at \$1.11 per bushel. In this year, Roosevelt's administration was continued

*Beginning 1904, the forty stocks (twenty rails and twenty industrials) have been used in place of the ten stocks previously mentioned.

by his election to the office of Presidency, and the attention of the whole world was attracted to the Russo-Japanese War.

1905

Prosperity continued in increasing and unparalleled measure. New railroad construction amounted to 5,050 miles, and pig-iron production jumped to 22,990,000 tons selling at \$18 a ton. Bank clearings advanced to \$143,900,000,000 while failures declined in number to 10,740. Immigration increased rapidly to 1,026,000 persons.

Both volume of foreign trade and excess of exports, showed an advance, and \$3,498,000 were imported in excess of gold exports. The average surplus reserve of the New York banks declined to only \$10,200,000. The American index figure of commodity prices advanced to \$8.09.

The stock market was very active. On the New York Exchange, transactions amounted to 263,000,000 shares, and new securities listed amounted to a billion and a half dollars, of which nearly a billion were in bonds. The forty stocks in this year had an unprecedented rise from 82 to 100. Net railroad earnings advanced to \$3,129 per mile. Though the cotton crop declined 3,000,000 bales, the wheat and corn crops were both larger than in 1904, amounting together to more than 3,400,000,000 bushels. Though surface conditions appeared wonderfully prosperous, confidence was badly shaken by the Life Insurance and Traction Company exposures of this year.

1906

Prosperity was abnormally inflated. New construction in this year amounted to 5,499 miles, and iron production advanced to 25,000,000 tons selling at \$21. Bank clearings were at the second high point on record, increasing to \$160,000,000,000, while failures declined in number to only 10,031 or .61 of 1% of all the firms in business. Immigration amounted to 1,100,000.

In monetary affairs the volume of foreign trade amounted to \$3,118,000,000. The balance "in favor of" this country increased to \$477,000,000; while the excess of gold imports, aided by artificial importation, amounted to \$108,000,000. The average surplus reserve of the New York banks dropped to only \$7,300,000. Commodity prices advanced as shown by the American index figure of \$8.42.

On the stock exchange, transactions increased, and prices continued abnormally high. The forty conservative stocks dropped from the high of 114 in January to a low point of 100 in the winter. Railroad net earnings advanced to \$3,580 per mile. Crops were tremendous. Cotton yielded 13,000,000 bales at \$.115; corn yielded 2,927,000,000 bushels at \$.56; and wheat yielded 735,000,000 bushels at \$.865. Such satisfactory crop conditions, however, only served to increase the mad pace which prosperity had assumed, and students of conditions were not satisfied. Liquidation, therefore, commenced, securities and merchandise were sold, and stocks of all classes declined in price. The money situation was especially strained, as the depression of 1903 was

not severe enough to liquidate many accounts which should have been cleared up. In fact, conditions were far from satisfactory at the end of the year. This was the year of the San Francisco Earthquake and the culmination of the major bull movement beginning in 1897.

1907

In this year prosperity, carried to an extreme point, collapsed in panic. But, as is usual, the change in conditions was not foreseen except by those students of fundamental statistics who clearly saw by means of a Compositplot that the area of prosperity was about consumed, and that we had entered another period of liquidation which might not end for several years. New construction decreased to 5,499 miles, while iron production advanced to 25,000,000 tons selling at an average price of \$24. Bank clearings, however, declined to \$145,000,000,000, and failures increased in number to 10,990. Immigration advanced to 1,285,000.

In monetary affairs, the total volume of foreign trade continued its increase to the unparalleled figure of \$3,346,000,000; the balance from excess of exports increased to \$500,256,000; and in gold movements the excess of imports declined to \$88,000,000. The bank reserves were everywhere extremely low, those in New York averaging under \$400,000. This together with abnormally high commodity prices, as illustrated by Bradstreet's index figure of \$8.90, showed money conditions to be highly unsatisfactory.

The stock market, always a sensitive barometer of all changes, declined decidedly from the beginning of the panic in March. On the New York Exchange, transactions amounted to only 196,000,000 shares, and new securities, to only \$997,000,000. The forty stocks which had temporarily recovered from their severe decline in 1906, dropped again from a high point of 111 in December, 1906, to a low point of 60. Railroad net earnings continued their increase to the high point of \$3,700 per mile, held up by crops and the volume of trade. Crops declined somewhat from the bumper crop of 1906, but were still excellent. Wheat and corn together amounted to more than 3,200,000,000 bushels and sold at \$.963 and \$.64 respectively. Domestic rates on time loans advanced nearly to 6%, while rates abroad advanced to 4¾%. Legislation adverse to trusts and railroads added to the general consternation in business circles, and before the end of the year, the country had dropped from over-active prosperity into dull depression.

1908

Depression had, in this year, extended from the stock market to other lines of business. New building was at a very low ebb. Although 3,654 miles of new railroad were constructed, only 15,900,000 tons of pig-iron were produced, and there was little new building construction. Pig-iron sold at about \$17.70 per ton. Bank clearings declined to \$132,408,000,000 and failures increased in number to 14,873. The condition of the labor market

is shown by the fact that only 782,870 immigrants entered the country, although wages still held up.

As has been universally true in the past, such a period of depression is accompanied by low money rates. The surplus reserves held by the banks were very large throughout the entire year and the percentage of cash was high. Not only were rates low in the United States but also throughout Europe. The volume of foreign trade amounted to \$2,869,-209,000 and the balance of trade "in favor of" the United States amounted to \$636,461,000, while gold movements showed an excess of exports amounting to \$30,939,163. The demand for money was still further lessened by a distinct decrease in commodity prices, the Bradstreet Index declining to \$7.72 in June.

The stock market remained almost as depressed as in 1907 both in transactions and new securities listed, but by November the prices began to show a distinct rise. Thus the forty stocks, which had remained under 80 all during the spring, rose in December to 92. Railroad net earnings declined to \$3,144 per mile. Fortunately, crops remained good. Cotton, yielding 13,451,000 bales, sold at \$.106 per lb.; corn yielding 2,668,000,000 bushels sold at \$.786; and wheat yielding 664,000,000 bushels sold at \$1.05. In politics a temporary currency bill was passed to meet the depressed conditions; while Mr. Taft's election to the Presidency secured the continuation of the Republican administration and policy. The depression had passed the low point, giving place to marked

improvement. In fact, by the spring of the next year, the area of depression was completed.

1909

Though still suffering from the depressing business conditions following the panic of 1907, this was a year of apparent improvement. New railroad construction increased to more than 3,400 miles, and the production of pig-iron showed a decided advance to 25,800,000 tons selling at about \$18. Bank clearings also advanced to \$165,838,000,000, and failures decreased in number to 12,430. Immigration continued low at 751,786 new arrivals.

In monetary affairs, money rates continued at a low level, as is usual in depressions following a panic. But the volume of foreign trade advanced to more than \$3,000,000,000, due entirely to an increase in importations, while the excess of exports decreased to \$252,677,000. Once more gold exportations exceeded imports, reaching in this year the high point of \$88,793,000. Bank reserves declined from the high figures of 1908 to more normal figures. Bradstreet's index figure of commodity prices advanced to \$8.51.

The stock exchange was again thoroughly active. In New York, transactions amounted to more than 214,000,000 shares, while new securities listed increased to \$2,424,000,000, almost equally divided between stocks and bonds. The forty stocks rose from 86 to 105. Railroad earnings increased slightly in the gross, while the net was \$3,912 per mile as a result of economies introduced during the

depression. Though crop reports in the early part of the year were unsatisfactory, the final figures showed a decline only in cotton, while wheat and corn were good. Cotton yielded more than 10,000,000 bales selling at \$.126 per lb.; corn yielded 2,772,000,000 bushels selling at \$.767 a bushel; and wheat reached the high point of 737,000,000 bushels selling at \$1.26 per bushel. These figures signify that the country enjoyed a temporary improvement, as would be expected after the conditions of 1907 and 1908.

1910

During the first few months of this year mercantile conditions forged ahead in a fashion that bade fair to precipitate a premature period of forced liquidation. Only the slowing up of business, as general conditions became increasingly unsound, saved the situation. Iron production, which averaged 2,500,000 tons for the first four months of the year, averaged only 2,100,000 tons for the remaining months, while the price fell from \$19 to less than \$16 before the end of the year. Bank clearings declined slightly to about \$164,095,000,000, and liabilities in failures increased by an average of \$4,000,000 a month over those of 1909. The number of immigrants increased to over 1,000,000.

The fundamental figures in monetary conditions showed most clearly the unsound condition of the country, which could not have withstood the strain of a continued advance in mercantile affairs. Thus, money rates were forced up from their low level of 1909, marking a strained money market fully a

month earlier than the usual rise due to crop movements. The loans of the New York Clearing House banks averaged per month more than the deposits for the twelve months of the year. These facts, together with a yearly figure for Bradstreet's index of commodity prices amounting to about \$9.00, showed clearly that the country's money market was strained and unsound.

Investment conditions reflected this unsatisfactory state of affairs most faithfully. Transactions on the New York Exchange declined to less than 165,000,000 shares, the lowest figure since 1903; but new securities listed, amounted to \$2,047,664,045, a considerable amount of which was due to the abolishment of the unlisted section of the Exchange. The forty stocks dropped from 104 to 83. Although gross earnings of the railroads showed an increase over the year before, the unfavorable increase in the ratio of operating expenses caused net earnings to show a marked and most unsatisfactory decline. Optimism based on the crop reports was well justified by the actual returns. Wheat production declined somewhat, but cotton was better, and corn yielded a bumper crop of more than 2,800,000,000 bushels. The prices of all three, however, declined respectively to \$1.12 a bushel, \$.151 a pound and \$.66 a bushel. Uncertainty was the keynote of the year. "Insurgency," Democratic success at the polls, and governmental delay in trust and railroad rate questions, had their share in causing hesitation.

1911

Mercantile conditions continued to decline. Total bank clearings showed a decline of 3%. Under conditions of normal growth along the line X-Y, clearings for the country, excluding New York, should have been increased greatly instead of remaining so nearly on a level. There was a larger number of failures, and liabilities were about 5% lighter. A marked decline of more than 15% was shown in immigration reports. Average per mile earnings of the railroads reporting to the Interstate Commerce Commission declined, but both gross and net earnings of the ten roads recorded on the Desk Sheet increased, as compared with 1910. Commodity prices declined, and this slackening was followed by an advance in food-stuffs, which checked the decline of Bradstreet's index of commodity prices.

Money rates were much easier, but students of fundamental conditions did not feel that the loans of the banks had been sufficiently liquidated to render the situation satisfactory. In January and March the National Banks reported a percentage of loans to deposits, with the exception of the call of September 1, 1910, higher than at any time since 1908. The net deposits also increased, the figure \$6,689,018,000 on June 7, being the highest on record, with the per cent of reserve at 22.10% compared with a previous high of 23.94% in 1908. Imports declined, and exports of general merchandise increased about 15%.

Investment conditions during 1911 were very

unsatisfactory. Dullness was at times exceedingly marked. On the New York Stock Exchange the number of shares traded was very small, 127,207,258, compared with 164,150,061 in 1910. Bond sales increased, and fewer new securities were listed, but the amount of actual issues was nearly 15% greater. Gold production continued to increase. A severe drought reduced the yield in some of the crops; wheat, oats, hay, and potatoes were below the average; corn was only fair, while the largest acreage of cotton ever known produced over 14,000,000 bales. Investment conditions were adversely affected by the Supreme Court decisions and reorganization of large corporations under the Sherman Law, the consequent discussion and uncertainty reacting unfavorably on the market and business in general.

1912

With the exception of the activity attendant upon the good crops, business remained for the most part below the line of normal growth. Failures numbered even more than in the preceding year. Bank clearings, although responding in the late fall to the crop influence, remained nearly at a level for the first three quarters of the year. Commodity prices advanced sharply throughout the year. Pig-iron production increased to more than 29,000,000 tons. Railroad earnings as reported to the Interstate Commerce Commission showed a gain; both gross and net earnings of the roads increased. Immigration showed a marked gain.

Money rates were very high. Circulation increased. Surplus reserves of the New York clearing house banks (excluding the trust companies) reported at \$44,000,000 in February, was reduced in July to a deficit of more than \$200,000. Imports gained about 19% for the year, giving the largest total in the history of the trade. The balance in favor of the United States was \$581,144,938 compared with a previous high of \$636,461,360 in 1908. Gold exports gained about 27% over 1911, with gold imports remaining about the same, thus resulting in a rather less favorable balance.

Investment conditions were not satisfactory. Prices of forty representative stocks fluctuated from a winter low of 89 to a high of 100 in August. Bond sales fell off and prices were lower than in any recent year since 1908. The crops were large, but cotton made a small showing as compared with the big crop of 1911. Tariff discussion, corporation investigation, and other unsettling influences, disturbed the market and business in general. Labor troubles were particularly in evidence and exerted a most adverse effect. Students of fundamental conditions saw in Mr. Wilson's election the fulfillment of the great law, that whenever there is deep social and economic unrest and dissatisfaction, the people seek a new administration in hope of relief.

1913

The decline in business which started in 1911 continued this year. Over-expanded conditions were temporarily bolstered up by bumper crops in 1912,

but in 1913 the decline was rather hastened by unusual events, notably the Ohio flood in March and the financial strain caused by the Balkan War, which ended during the year. Failures again increased in number from 14,647 to 15,296, and in liabilities from \$202,085,974 to \$282,232,584, although the average liabilities per failure were somewhat less. Immigration was not at first affected. Commodity prices declined throughout the year, indicating that the turning point had been reached in 1912. Pig iron production during the first of the year was the heaviest in history, but after the first few months declined rapidly.

Monetary stringency and contraction of credit were characteristic throughout the entire year. Rates for prime commercial paper averaged over $5\frac{1}{2}\%$ and rates of the banks of England, France and Germany averaged nearly 5%, the highest since 1875 and probably for many years before that. Much of the strain was caused by the financing of the Balkan War, which ended during the year. If foreign monetary affairs had not been so serious, the heavy balance of exports would have been favorable. As it was, Europe settled the balance by returning United States securities. Two direct results of the monetary stringency were, a steady contraction in business, and the speedy enactment of a new currency law.

Security prices declined steadily from the first of the year, and on June 11 broke sharply in a near panic. The forty stocks which averaged 94 in January, dropped to 76, and the twenty bonds fell

from 96 to 91. The summer market picked up considerably, but another drop occurred in December, when many issues sold lower than in June. Listings dropped \$556,000,000, lower than the previous year. New issues fell from \$2,253,587,300 in 1912 to \$1,645,736,200, and fewer corporations were chartered than in any year since 1908. The copper stock market held up remarkably well, considering depression in other lines, due to heavy European demand for copper in preparation for war. Politics caused uncertainty throughout the entire year because of important legislation pending and active anti-trust investigation. During the last three months the tariff and income tax law (on October 3) and the new currency law (on December 23) were passed. Crops were about average; winter wheat was a bumper crop, but corn did only fairly well. To students of fundamental conditions, it was evident that a year of depression lay ahead.

1914

By far the greatest event in this year was the beginning of the European War. The decline of 1913 quickly developed into depression. Several enormous failures occurred in June and July, including the Claffin catastrophe. This liquidation, however, seemed to clear the air. There were many indications that an improvement in business would come with the bountiful fall harvests. Such was the situation when on August 1 the European War burst upon the world, bringing panic to financial circles, the closing of exchanges, and stagnation

to business. As business was well liquidated, no serious national catastrophe occurred, and matters soon began to adjust themselves to the new situation.

The total barometer figures for the year tell of severe depression, though they do not show the stagnation which occurred during the latter half of the year. Bank clearings for the whole country fell to \$155,000,000,000 from \$170,800,000,000 in the previous year. Liabilities of failures touched nearly \$360,000,000, the heaviest mortality for twenty-two years involving over 1% of the total number of firms in business. Immigration, however, was the heaviest since the year of 1907. The commodity price index, which had been declining in sympathy with general business, shot up to \$9.8495 when war was declared, by far the highest point in history, but prices soon fell off again when it was realized that imports from Europe would be resumed. Pig iron production dropped to 23,000,000 tons, new building was very quiet, and railroad construction fell to 1,532 miles, the lowest in seventeen years. Railroad earnings declined sharply.

Monetary conditions during the first half of the year were distinctly easy. Commercial paper rates ruled below 4%, with surplus reserves of the New York Banks (excluding trust companies) as high as \$40,000,000. The declaration of war in a moment transformed this comfortable position into a dangerous crisis. Enormous shipments of gold bullion and coin were made from New York to the Bank of

England, but sterling exchange soared to \$5.10. The heavy surplus in the New York Banks was soon displaced by a deficit of about \$30,000,000. Money rates rose to the nominal figure of 8%, but funds could hardly be obtained at any price. Clearing house certificates amounting to \$124,695,000 were issued in New York, and over \$360,000,000 of emergency currency was taken out, raising the per capita circulation to \$37.31. In Europe a general moratorium of debts was established. Enormous grain exports soon built up a favorable trade balance, thus stopping gold exports, and the inauguration of the Federal Reserve law on November 16 restored the monetary situation to comparative ease.

When all of the stock exchanges throughout the rest of the world closed, an avalanche of selling was turned upon the New York market. On July 30 the forty stocks dropped to 71 and the twenty bonds to 91. The New York Exchange closed, and the other United States exchanges quickly followed suit, reopening December 12. Some trading was carried on in outside markets, where prices ruled considerably below the closing prices of the New York Exchange. When the exchanges were finally opened, severe restrictions and minimum prices were imposed to prevent another flood of European selling, but stocks for the most part averaged above the closing prices of July 30. The twenty bonds, however, sold down to 88. The crops, especially winter wheat, were excellent, and because of "war prices" for grains were the most valuable ever grown. Wheat sold up to \$1.68 a bushel. Cotton,

however, was forced down to 6 cents a pound. When the war broke out anti-trust agitation by the government was dropped and the eastern railroads were allowed to increase freight rates. With these factors added to the sound fundamental condition of business, close students of the situation looked for a substantial improvement during the coming year.

1915

The year 1915 was one of phenomenal expansion, demonstrating in a most forcible way the application of the law of equal reaction to business conditions. It opened with business in the depth of depression, and ended in the midst of the greatest prosperity ever known. The solid foundation laid in the depression of 1914 was the real basis of this tremendous expansion. War orders and continued huge grain shipments gave the first impetus to business. Gradually domestic trade began to revive, and finally, when the success of tremendous crops was assured, the boom in business broke all bounds. Although the total yearly figures show only to a limited extent the tremendous activity attained by business during the latter part of the year, they present a wonderful record. Clearings for the year increased to \$187,000,000,000 compared with \$155,000,000,000 the previous year. Failure liabilities dropped from \$358,000,000 in 1914 to \$300,000,000, the number of small failures considerably increasing, as is usual at the close of a period of depression. Gross rail-

road earnings amounted to \$863,000,000 compared with \$837,000,000 in 1914. Commodity prices moved rapidly upward to levels never before known. The iron and steel industry experienced the greatest revival in its history. Pig iron production for the year amounted to 29,900,000 tons compared with 23,300,000 tons in 1914, while unfilled tonnage of the United States Steel Corporation nearly doubled during the year.

Monetary conditions throughout the year were extremely easy, in spite of enormous business activity. Commercial paper rates, even during the fall months, dropped below 3%, while surplus reserve of the New York Clearing House Banks (excluding trust companies) swelled to over \$200,000,000, figured under the new reserve requirements. This unprecedented ease in money was due principally to the enormous importation of gold from Europe. Huge exports of merchandise from the United States to the belligerents had completely reversed the international balance of 1914, and forced European exchange rates to unheard-of low levels. Sterling exchange, which touched \$5.10 in 1914, dropped to \$4.50, and exchange of the other belligerent countries suffered even greater depreciation. In order to make further purchases in the United States, the European nations therefore shipped more than \$400,000,000 in gold to this country. The effect of such a great increase in our money supply was immediately evident. Circulation per capita at once increased and by the end of the year had swelled from \$34.55 to

\$38.48, while the banks, especially in New York, suddenly found themselves with more money than they could profitably employ.

The advance which took place in certain stock prices was one of the most spectacular in history. Early in the year it became evident that a number of companies were going to be greatly benefited by war orders. Bethlehem Steel, among the first of the "war stocks," in a few months' time jumped from about 46 to 600. Suddenly, late in the spring, the whole stock market began to boil, for fundamental conditions were sound and a reaction from the preceding long period of low prices was due. The greatest activity occurred in the industrials, the rails being depressed by heavy foreign selling. The average of the forty stocks, which stood at about 72 at the first of the year, by December had risen to 102. A tremendous demand for funds was felt in the latter part of the year, largely for speculation in stocks. Bank loans expanded rapidly, reaching their maximum for the year \$3,257,606,000 in December. Surplus reserves showed a marked decline. Bonds ruled heavy throughout the year, due to the war's tremendous demand for fixed capital, although some strengthening in bonds occurred during the last two months. Grain prices were very high during the first of the year, wheat selling up to \$1.80 per bushel. The 1915 grain crops, however, sold considerably lower. Cotton advanced to over 12 cents per pound, due to increased demand. Wage advances were evident in nearly every branch of industry and labor shared in the general pros-

perity to a greater extent than ever before. Domestic politics were more favorable to general business.

1916

Phenomenal expansion in United States business and finance continued throughout 1916. The Barometer Index figure advanced from about 75 to 124. Nearly every line of industry participated in the great boom and production increased far beyond all previous records. Bank clearings amounted to \$260,000,000,000, a gain of more than 35% over 1915. Failures numbered 16,700 compared with 20,600 the year before, while liabilities fell off to less than two-thirds of those in 1915. Gross railroad earnings amounted to over \$1,000,000,000 compared with \$860,000,000 in 1915. The Babson Price Index of Industrial Commodities jumped from \$1.30 to \$2.20. Bradstreet's index rose 30%. Pig iron production exceeded 39,000,000 tons, 8,000,000 greater than any previous record year.

Rates for short-time money continued easy until the last of the year, when a gradual strengthening took place. Net gold imports of \$530,000,000 kept the banks in a fairly easy position, notwithstanding unprecedented loan expansion. In December gold imports slackened and call rates at New York temporarily soared to 15%. Resumption of gold imports, however, soon forced rates back again to low levels. The loan item of New

York Clearing House Banks averaged \$2,270,000,000 for the year, against \$1,816,000,000 in 1915. The balance of foreign trade in favor of the United States exceeded \$3,000,000,000 and about six times the average balance in peace times. Money in circulation per capita jumped from \$38 to \$43 during the year. Sterling exchange was well supported by gold shipments and ruled about \$4.75 throughout the year. Exchange on the other belligerents, however, sank to new low figures.

The average stock prices experienced a smaller net gain than other economic subjects. This was due to the fact that the stock market at the beginning of 1916 had already well discounted current business prosperity. Prices declined during the summer. Early in the fall, however, when it became apparent that the war would last another winter, great advances were scored by certain industrial stocks. United States Steel touched 129¾, Bethlehem Steel 700, Chino Copper 74¾, Utah Copper 130, Central Leather 123, etc. The whole average of 40 stocks for a few weeks in November and December held close to 110. Then came President Wilson's first peace note to the belligerents, which precipitated a drop of about ten points in the stock averages. The year closed with the 40 stocks several points lower than when it began.

Bonds gained slightly toward the last of the year, but the scarcity of funds for long time investments prevented any extended advances. During the year a great wave of industrial expansion took

place. More than 30,000 new corporations were formed, among which a host of wild-cat promotions were included. Students of fundamental conditions recognized this as a sign of a coming reaction. Crops, on the whole, were disappointing and were inadequate to meet the foreign and domestic demand. Wheat sold up as high as \$1.90 a bushel while cotton touched 21 cents per pound. Unprecedented advances in wages were obtained by labor in nearly every line of business. Keen students of the whole industrial and financial situation put their affairs in shape to weather the reaction which they knew must come.

1917

The year 1917 was one of radical adjustment to a war basis. Soon after declaration of war, April 6th, the Government began the task of concentrating the country's industrial power on lines essential to military needs. Business in such lines was extremely active; other branches of industry suffered from priority rulings which gave precedence to war business in matters of transportation, raw materials, etc. In both the so-called "essential" and "non-essential" lines, net profits were generally smaller than in 1916. This was due to drastic profits taxation and to price fixing. Taken as a whole, business conditions were not so good in 1917 as in 1916, although the total volume of both domestic and foreign trade continued very large. The Babson Price Index of industrial materials advanced from \$2.37 on January 1, to \$3.24 in July, but later dropped to \$2.34.

With the entrance of this country into the war in April, the flow of gold to the United States ceased, causing money rates to strengthen as the year advanced. Bank loans expanded far beyond any previous record. Loans of New York Clearing House Banks jumped 85% during the year. With the heavier demand for money, Federal Reserve Banks came into active operation. By December, 1917, the amount of Federal Reserve Notes had increased to \$1,251,205,000, compared with \$272,873,000 the first of the year.

All prices of securities suffered a severe decline, which culminated in November. The number of shares traded dropped from 233,000,000 to 185,000,000. The drop was the most abrupt since the panic of 1907. The bond market was monopolized by government issues, over one-half of the total transactions being in war loans. Both railroads and industrials sold at least 30% lower than in the previous year. Twenty copper stocks showed a loss of nearly 40% during the year. The price of twenty high-grade bonds dropped from 94 to 79.

Harvests were abundant, except in the case of wheat. This was a disappointment because of the needs of the Allies. The wheat crop was only a little larger than the small crop of 1916. Corn and oats, however, were the largest on record. Farmers received excellent prices and grew extremely prosperous.

1918

On November 11, 1918, the great war was brought to an end. After the surrender of Bulgaria on

September 30th, the break up of the Central Powers was amazingly rapid. The closing events of the war came in such quick succession that for the most part business was caught unprepared. During November and December the majority of war orders were cancelled. The impetus, however, which general business had gathered during the war prevented a serious drop.

From the time the armistice was signed to the close of the year industry simply "marked time"—awaiting developments. Cancellation of war contracts caused the temporary dislocation of many workers and some unemployment. Prices of most commodities began to decline, altho not rapidly on the average. Babson's Index of Industrial Commodities declined from \$2.77 November 1, 1918, to \$2.63 January 1, 1919. Bradstreet's Index of 107 commodities declined from \$18.88 to \$18.53.

Statistically, 1918 was a year of highly stimulated business but profits were not as satisfactory as in 1916. Bank Clearings amounted to \$332,380,576,000 or 8% more than in 1917, but these were largely inflated by the high prices of commodities. The volume of war business was tremendous, but production for civilian purposes was restrained to a minimum. Commercial failures were the lightest in years, an evidence of artificial stimulation and absence of competition.

The 40 stocks which had been low because of heavy taxes and government restrictions began to discount peace at the surrender of Bulgaria, and by the time of Germany's surrender had advanced

about 7 points. Money which had been fixed at 6% during the war, eased off to $5\frac{1}{4}\%$ when capital restrictions were removed, but money continued difficult to obtain and rates were firm for the remainder of the year. The 20 bonds moved upward about 7 points on peace news, but the rise was based more on sentiment than on immediate improvement in financial conditions.

Taken altogether 1918 should be counted as a prosperous year. Prosperity, however, was largely in paper profits. The actual volume of business transacted was not abnormally large, but price inflation served to increase all business records giving a prosperous appearance. Certain classes had gained greatly by the war but others, principally the soldiers, were poorer because of the war. Conditions therefore were not well balanced and business was not in a secure fundamental position.

1919

The year 1919 was one of sharp reaction from the restrictions imposed by the war. In the early part of the year commodity prices dropped, transactions on the New York Stock Exchange declined, and the forty stocks dropped to about 80. As the year progressed, however, a post-war boom took place. Speculation reached fever pitch. Stocks traded on the New York exchange averaged more than a million shares a day. Industrial stocks rose from 83 to 119, Rails from 84 to 90. New building, which had been confined almost entirely to industrial and war projects, during 1919 consisted of a fair volume of residential building.

A wave of reckless extravagance swept the country. Automobile factories had orders booked six months ahead. Bradstreet's commodity price index which had fallen to \$17.22 rose to \$20.17. Bank clearings averaged a 26% gain over the previous year. In May the campaign for the Victory Liberty Loan was opened and about \$5,250,000,000 subscribed.

In spite of the apparent great prosperity, underlying conditions were becoming unsound. The banks found themselves in an over-extended position, with loans increasing steadily. With the ending of war-orders, overtime work at the factories ceased and the war bonus system was abandoned. Labor became restless and dissatisfied. Strikes occurred in almost every line of industry. In November the great steel strike took place involving over 365,000 men. It was evident at this time that although business was still showing a substantial increase over the previous year, *expressed in dollars*, yet in *actual volume* there was a distinct slackening. Pig Iron production for 1919 showed a loss of 20%—U. S. Steel orders were 27% lighter.

Earnings of industrial companies showed the first break in their four year upward climb. Net earnings in 1919 were 40% less than in 1918. The business situation was clearly pictured by the Compositplot after the dollar subjects had been deflated. Students of fundamental conditions realized that the real peak of prosperity had passed and began to prepare for the reaction of the future.

In order to allow for further expansion
of the yearly reviews, pages numbers 216
to 221 inclusive have been omitted.

CHAPTER VI

SUBJECTS RELATING ESPECIALLY TO MERCANTILE CONDITIONS

WHEN interpreting the Desk Sheet subjects treated in this and the following two chapters, one must remember that it is first necessary to decide in which of the four periods the country is: whether in a period of depression, a period of improvement, a period of prosperity, or a period of decline. This is due to the fact that the same change in the figures of a given subject signifies different results under different periods; for example, during a period of depression an *increase* of Bank Clearings is a favorable sign, but during a period of prosperity a great increase is a dangerous sign. This problem, however, is readily solved by reference to the Compositplot.

After deciding in what period the country is, each set of subjects must be interpreted in accordance with certain rules. In other words, with a given subject a *decrease* signifies one thing, an *increase* signifies another, while *no change* signifies a third. Therefore, the figures on each subject should be examined *independently* to ascertain whether the figures show a decrease, an increase, or no change. The new figure, whatever it is, will then be interpreted according as it shows "more satisfactory conditions," "less satisfactory conditions," or "uncertainty." After reaching this conclusion, relative to what the figures on the subject under con-

sideration signify, a note should be made of the result.

Each subject is treated in this manner and a conclusion reached. All of these conclusions are then summarized and count is taken of how many subjects signify an improvement, how many signify a decline and how many signify something else. All of these are then averaged, though a greater "weight" may be given to one subject than to another; and a conclusion reached as to the duration of the present period and the nature of the next change.

In short, the study of Fundamental Statistics consists simply of (1) obtaining the latest figures on each subject, noting their trend; (2) comparing both the figures and the trend with normal figures and normal trends for said subject; and (3) deducing one final conclusion as to whether the figures and their general trend are becoming more or less normal, considering the areas of the Compositplot and the Law of Equal Reaction.

In this study, although theoretically the proper method is to consider each subject independently, yet the only safe method is to consider what they, *as a whole*, indicate. This can be best seen by a study of the Compositplot. Therefore, although the directions given in these three chapters are very valuable for use as a check upon what the Compositplot indicates, yet no independent subject should be allowed to overshadow what the Compositplot indicates, viz.: the Compositplot always shows at a glance in what minor period we are and what period may next be expected;

and gives an approximate idea of how long it will probably be before this next period of depression or prosperity will be upon us.

Therefore, in all cases, the "area consumed," as shown by the Compositplot, must also be carefully considered.

Let us now turn directly to a study of such subjects as relate especially to mercantile conditions.

WEALTH, BUILDING AND REAL ESTATE OPERATIONS

"Wealth," according to Theodore E. Burton, "comprises all things which are alike useful, limited in supply, and transferable. All wealth is produced from or created by land, labor or capital. Land includes every form of nature in earth, seas or air, together with the natural forces which may be set at work. It is the source of our so-called 'raw materials.' Labor includes physical strength and exertion, and the mental qualities which furnish them with method and ingenuity.

"Capital, technically defined, is wealth withheld from immediate consumption for the purpose of producing wealth in the future. It includes food, clothing and fuel for support of those engaged in production of wealth, necessary seed for planting, raw materials for the finished products of manufactures or, if we look at the subject from the standpoint of the employer or capitalist, money for wages and the purchase of supplies. These may be included in the term 'circulating capital.' There is also fixed capital, which includes tools, machines,

factories, buildings occupied or used by those engaged in productive employment, improvements upon land, likewise ships and railways with all their equipment. Nations are rich or poor not in proportion to the amount of land or natural resources which they have, but in accordance as they have an abundance or lack of capital."

The above describes what is technically known as "wealth." A concrete example of what constitutes wealth may be found in the following tables. The figures are made up by the Bureau of the Census, Washington, and as reported for the census years, are carefully compiled records of actual values as appraised under the general terms, real and personal property. The figures for all years between the census years are estimates, and show proportional changes based somewhat upon partial returns in some of the items included. The tables show exactly the forms of wealth comprising the total \$187,739,071,090, according to the estimate of 1912.

ESTIMATED WEALTH OF THE UNITED STATES

	1904	1912
Real property taxed.....	\$55,510,228,057	\$98,362,813,569
Real property exempt....	6,831,244,570	12,313,519,502
Live stock.....	4,073,791,736	6,238,388,985
Farm implements and machinery.....	844,989,863	1,368,224,548
Gold and silver coin and bullion.....	1,998,603,303	2,616,642,734
Manufacturing machinery, tools, etc.....	3,297,754,180	6,091,451,274
Railroads and their equipments.....	11,244,752,000	16,148,532,502

	1904	1912
(a) Street railway, etc....	\$4,840,546,909	\$10,265,207,321
(b) All other property....	18,462,281,792	34,334,290,655
Grand total.....	107,104,211,917	187,739,071,090

a. Street railways, etc. (itemized)

Street railways.....	\$2,219,966,000	\$4,596,563,292
Telegraph systems.....	227,400,000	223,252,516
Telephone systems.....	585,840,000	1,081,433,227
Pullman and private cars...	123,000,000	123,362,701
Shipping and canals.....	846,489,804	1,491,117,193
Privately owned water works	275,000,000	290,000,000
Privately owned electric light and power stations.....	562,851,105	2,098,613,122
Total.....	4,840,546,909	9,904,342,051

b. All other property (itemized)

Agricultural products.....	1,899,379,652	5,240,019,651
Manufacturing products....	7,409,291,668	14,693,861,489
Imported merchandise.....	495,543,685	826,632,467
Mining products.....	408,066,787	815,552,233
Clothing and personal orna- ments.....	2,500,000,000	4,295,008,593
Furniture, carriages, etc....	5,750,000,000	8,463,216,222
Total.....	18,462,281,792	34,334,290,655

Though the census figures are the only statistics which give the actual value of property in the country, since a complete statement is made only once in ten years, the needs of fundamental statistics lead to the adoption of certain other reports which may be expected to serve as barometers of the conditions termed wealth by our first proposition.

Building statistics, including railroad and municipal constructions, give us the most interesting figures on this subject. Because a new house costs \$10,000, all land on the same street improves and the valuation of the whole city is some thousands of dollars greater at the next census. A factory

erected on the same street might reduce the real estate value as residence property, but might so benefit the city as a whole as to increase greatly its entire wealth.

The difficulty of obtaining accurate reports of building has been an obstacle heretofore in the way of systematic study of the subject. The laws of cities and states are so different, that the returns from building permits alone are not reliable as a basis. But from the field of the contractor another set of figures is to be had. The best of these have been developed by the F. W. Dodge Co., of Boston. The business of such firms is to make a thorough canvas of the principal fields of constructive activity in order to furnish accurate information of business openings for contractors and supply firms of all kinds. Reports gathered by this very thorough system have been published from time to time for many years; but have only recently been segregated and tabulated. This has been done by my office, and the figures are now ready for the use of students of fundamental statistics. These reports cover the new work, both in private and municipal building and railroad construction. The values given are conservative and the result of careful inquiry by trained observers.

Fire losses, as reported monthly, include all fires, and show the total destruction of timber, rolling stock of railroads, wharfage and shipping, as well as buildings of all kinds. As in the case of construction or building statistics, the amounts given in these fire loss tables cannot be compared directly

with the census figures on wealth. Sometimes the insurance loss is given, sometimes the assessed valuation, sometimes an estimate, as in buildings and contents under appraisal. The direct loss by forest fires is hard to determine exactly, while the indirect losses, so well known to the students of forestry, cannot be calculated for use at frequent intervals. The monthly record which is obtainable, however, is a valuable indicator of conditions likely to contribute to the improvement or decline of business and should, for that reason, be watched. Conditions of poverty following fires, or general improvement as a result of new construction, are both necessary and valuable barometers of business and show where to increase or decrease investment in land, labor and capital.

Another factor of importance, and bearing a relation to the second group of subjects we are considering, is the real estate business. To understand rightly the financial condition of this country, we should know the history of real estate booms and watch for increased rents either of land or buildings. During the hard times of the winter following the crisis of 1907, many of the leading manufacturers reduced their rents fifty per cent, some more and some less. By such means, they hoped to keep their employees on hand for renewed production. Such action was an attempt to meet the wage-earner half way and is directly opposed to the spirit of that real estate boom, the chief phase of which is an arbitrary raising of rents for tenements of all kinds. Such raises are usually seen in times

of improvement and especially towards the culmination of a period of prosperity when rising wage-scales attract the attention of the house owner who raises his rents, and reaps his harvest, at the same time when commodity prices and security markets are rising. A study of the statistics will show that real estate values are very good business barometers. New land developed, irrigation systems introduced, and a variety of similar factors may seem to be the causes of booms here and there; but none of these enterprises can be carried on without the active investment of capital under sound fundamental conditions.

So, for the purposes of fundamental statistics, beside the official figures on wealth, there should be included these three subjects: (1) building construction, (2) fire losses and (3) real estate values. These subjects give us a gauge of conditions more frequently than once in ten years.

As the business man is much more interested in the relation of wealth to prosperity than in any definitions, it is interesting to note history and ascertain how the wealth of the country has affected conditions in the past. Let us, for example, study the relation of "Miles of New Railroad" to general conditions, using these construction figures as illustrative of "New Building."* The first great crisis which this country experienced was in 1837; it was preceded by six years of great activity. The railroad mileage of the country had grown from

*This is done because it has been impossible to obtain good records strictly for "New Building" previous to 1902.

23 miles in 1830 to 1500 miles in 1837. Simultaneously with this growth in railroad mileage, new towns had been founded, new factories had been opened, desert lands had become taxable, farm property and the wealth of the country had rapidly increased. If the reader will turn to the records of this time, he will find that there was a greater increase of wealth between 1832 and 1837 than during any previous ten years of our history. A great number and variety of new enterprises were started, the bank deposits were large and there was great interest in trading, shipping, manufacturing and real estate. In fact, this great increase in real estate speculation resulted in a similar increase in the assessed valuation of both city and country property.

The second great crisis came in 1857, and was likewise preceded by a period of great increase in new construction. Immediately following the panic in 1837 there was a period of great depression and, although conditions improved in 1844 and 1845, there was no great advance until the discovery of gold in 1849. By 1852, California was actually sending millions of dollars worth of gold to New York. Shipping received a tremendous impetus both on account of the trade with California and on account of the Crimean War in 1854 and 1855. There was also a great increase in railroad mileage, which advanced from only 5600 miles in 1847 to 24,500 miles in 1857. In other words, in 1830 there were but 23 miles of railroad and in 1837, the year of the panic, this had been increased to 1500 miles.

During the ten years between 1837 and 1847, only about 4000 miles of new track were constructed, yet in the ten years from 1847 to 1857 about 20,000 miles were constructed. When studying such figures it appears very easy to have prophesied a panic for 1857. With the building of these 20,000 miles, thousands of new towns were settled, millions of acres of hitherto untaxed land became taxable as farm land, and a vast number of manufacturing and other enterprises were started. The result was another great increase in wealth equalled only by the increase which preceded the panic of 1837. As a still further result, came the panic of 1857, causing bankruptcies, suicides, and widespread destitution.

The third great crisis came in 1873. Like its predecessors, it had many causes among which, beyond a doubt, was the great increase in new building construction and new miles of railroad. The Civil War had been accompanied by great destruction of property and a consequent reduction in wealth. This was due partly to deterioration of values and the depreciation of the currency; but largely to the fact that the attention of the people had been turned away from productive industry. Ploughshares had been turned into swords with the accompanying decrease in production. When the Civil War was over, both the South and the North again gave their attention to agriculture, manufacturing and commerce, with the result of an unprecedented rebound. During the early sixties, taxable property decreased; during the early

seventies it rapidly increased. The gain in wealth between 1868 and 1873 was greater than it had ever been in the history of the country.

If later panics (that is, the panics of 1884, 1893, 1903, and 1907) are studied, the same law will be found to hold true. Furthermore, by inverse reasoning from these same figures it will be found that years of prosperity may likewise be anticipated.

We can therefore confidently affirm that a period of abnormal increase in new building is almost sure to be followed by a "period of depression."

Another set of building statistics have recently become available through the efforts of F. W. Dodge Company. These are figures of contracts awarded for each of the eleven main classes of building, as follows: Business buildings; Educational; Hospitals and Institutions; Industrial; Military and Naval; Public buildings; Public Works and Utilities; Religious and Memorial; Residential; Social and Recreational; Miscellaneous. By studying these figures it is possible to judge what class of building is running above or below normal.

The following are certain conclusions* relative to "Building Operations."

1. *During a Period of Business Depression.*

- (a) An increase forecasts better conditions.
- (b) A decrease forecasts continued depression.
- (c) No change signifies conditions to be stationary.

*Special Note:—In using the rules—as also is true in regard to the rules given subsequently under other subjects—one must compare the present both with the corresponding month of the preceding year and with the preceding month of the same year.

2. *During a Period of Improvement Following a Period of Business Depression.*

(a) An increase forecasts a period of prosperity.

(b) A decrease forecasts a set-back.

(c) No change suggests caution.

3. *During a Period of Prosperity.*

(a) A great increase suggests that prosperity is nearing an end.

(b) A decrease may tend to lengthen the period of prosperity.

(c) No change signifies conditions to be stationary.

4. *During a Period of Decline Following a Period of Prosperity.*

(a) An increase is indicative of further trouble.

(b) A decrease is natural under these conditions.

(c) No change suggests caution.

BANK CLEARINGS

Bank clearings are divided into two main classes:

(a) Total Bank Clearings of the United States.

(b) Bank Clearings of the United States with the exception of New York City.

In every large city, and many small ones having more than two banks, there is an institution known as a "clearing house." Each day at some given hour, the representatives of all the banks in the city or town meet at one of the banks to exchange checks drawn on one another and such a bank thus serves as a temporary "clearing house." To illustrate:

If customers of the Gloucester National Bank deposit during the day \$20,000 in checks drawn on the Gloucester Safe Deposit and Trust Company and customers of the Trust Company deposit checks to the amount of \$15,000 drawn on the Gloucester National Bank, instead of the Gloucester National sending a messenger to collect the \$20,000 from the Trust Company and the Trust Company sending a messenger to collect the \$15,000 from the Gloucester National, representatives of both banks meet and exchange checks and the Trust Company gives the Gloucester National a check for \$5,000 to balance the account. This process of settlement is not of great importance in a city having only two or three banks, but the average importance increases rapidly as the number of banks increases. In large cities such as New York, Chicago, Philadelphia and Boston, the "clearing house" occupies a separate building and has regularly salaried employees.*

Up to August 15, 1916, the clearing houses above mentioned conducted the entire clearing business of the country. On that date, however, the Federal reserve banks assumed the functions of clearing houses and extended the existing clearing facilities to many outlying districts, which up to that time had not been served by the clearing houses. Under the new plan each of the twelve Federal reserve banks handles checks for all the banks in their

*For further particulars as to the details of clearings and the business of clearing houses refer to Jas. G. Cannon's most complete book on the subject, entitled "Clearing Houses," and also to "The Principles of Money and Banking" by Conant. For a very simple and condensed statement, refer to pages 80-86, inclusive, of "Money and Investments" by Montgomery Rollins. The changes in the clearing system brought about by the Federal Reserve law should also be considered.

respective districts which agree to remit to them at par. This includes checks on all national banks throughout the country, and checks on a large number of state banks and trust companies. Eventually the Federal reserve banks expect to be able to collect checks on practically all the commercial banks throughout the country. Therefore, by taking the reports of the Federal reserve banks, together with those of the clearing house associations, we have a much more comprehensive record of bank clearings than formerly. Of course some allowance must be made for this change when comparing current figures for bank clearings with those previous to August, 1916.

As to-day, practically all payments are made by check and all business is carried on through the banks, the volume of money handled by the banks by check increases or decreases in constant ratio with the general volume of business of the country, *provided that the prices of the commodities and securities traded in, remain constant.* Therefore, as the banks pass their business through the clearing houses, a report on bank clearings is a very good barometer of present business conditions.

Some people make the mistake of assuming that by studying clearing house statistics solely one can easily *forecast* business conditions. A study of these statistics is *an aid* in forecasting conditions, both along lines above mentioned and in connection with Prof. Irving Fisher's "Equation of Exchange"*; but taken by themselves they are of little value.

*See Professor Fisher's book "The Purchasing Power of Money."

On the other hand, some critics do not care "to know about present conditions, but desire only to forecast future conditions." This point of view is also illogical, as a knowledge of present conditions is a necessary step toward forecasting future conditions.

Were it not for the systematic reports received on bank clearings, the Compositplot would be much less valuable. By a study of these clearings, as they are reported each week, one is in immediate touch with existing conditions throughout the country and is also able to study the "velocity of circulation," which, as it increases, is a form of credit inflation. In making use of these statistics two methods are used:

1. The bank clearings are plotted for each week for a number of past years with a horizontal scale for weeks and a vertical scale of billions. With one-half inch to a week this makes a plot about thirty inches long. It is customary to have each year under the preceding year, a thing easily done, as each plot is of the same length, although the angle of fluctuations is not constant. This gives comparative plots for several complete years, directly under which appears a plot for the present year up to the receipt of the last report on bank clearings. This not only gives the merchant a bird's-eye view of the situation for the present year, but also an idea of what may be expected at different periods during the year. During some periods of the year, poor figures on bank clearings are not, in reality, as unsatisfactory as if they had occurred at other seasons. The principal use of this plot, however, is to study

the fluctuations of the last portion of the plotted line for the current year. In other words, the business man notes whether the variations of the last few months plotted for the current year is upward or downward, and also how said variations compare with similar months of previous years, or in other words, with *normal* figures. If the plots for these previous years can be combined into one plot for an assumed normal year for purposes of comparison, the work is greatly simplified. This may seem to be a simple method of procedure, but when fully comprehended and carefully studied, it will be found to furnish not only a bird's-eye view of present conditions, but, in conjunction with a study of other subjects, the best possible idea of whether general business is becoming better, worse, or simply holding its own.

2. The other plan is more mathematical and more readily operated. Instead of plotting the figures for a series of years, merchants simply tabulate the totals as follows:

Bank Clearing of U. S.		Bank Clearing of U. S. Excluding N. Y. City	
Year	Total	Year	Total
1883	\$51,731,495,000	1883	\$14,299,194,801
1884	44,199,000,000	1884	13,214,136,635
1885	41,474,000,000	1885	13,329,553,274
1886	49,293,000,000	1886	15,613,431,439
1887	51,147,700,000	1887	17,676,148,967
1888	49,541,000,000	1888	18,447,472,681
1889	56,175,427,997	1889	20,280,223,092

Bank Clearings (continued)

1890	\$60,829,090,002	1890	\$23,370,482,393
1891	56,736,838,805	1891	22,987,539,593
1892	62,011,984,539	1892	25,349,515,337
1893	54,143,562,775	1893	22,848,525,045
1894	45,460,235,075	1894	21,098,428,055
1895	53,182,278,527	1895	23,306,684,638
1896	51,246,931,439	1896	22,304,476,717
1897	57,229,973,206	1897	23,894,945,735
1898	68,931,197,724	1898	26,859,415,287
1899	94,177,969,223	1899	33,286,297,332
1900	86,005,688,683	1900	33,431,486,823
1901	118,410,964,282	1901	39,952,278,440
1902	118,023,298,740	1902	41,695,109,575
1903	109,208,987,769	1903	43,238,849,809
1904	112,559,012,711	1904	43,971,594,038
1905	143,829,448,441	1905	50,087,388,239
1906	159,905,265,739	1906	55,227,436,983
1907	145,025,733,493	1907	57,893,565,112
1908	132,408,849,136	1908	53,132,968,880
1909	165,838,191,330	1909	62,249,402,999
1910	164,095,229,989	1910	66,820,729,906
1911	160,230,773,656	1911	67,856,959,831
1912	173,952,914,911	1912	73,208,937,649
1913	169,815,701,000	1913	75,181,420,000
1914	155,245,115,000	1914	72,228,539,000
1915	187,815,580,000	1915	77,253,170,000
1916	261,855,775,000	1916	102,275,125,000
1917	306,940,813,000	1917	129,539,761,000
1918	332,365,768,000	1918	153,805,518,000
1919	417,519,532,000	1919	181,716,888,000

Column 1 is for the bank clearings of the *entire* United States, and column 2 is for the United States *with the exception of New York City*. (*In practice, these figures are subdivided into months and only the past eight or ten years are studied.*) As a second step, the merchant notes from the monthly tables the actual figures received for the current year to date and estimates the probable clearings for the remainder of the year. This may be illustrated somewhat as follows: The merchant notes what proportion the clearings for January, February and March have heretofore borne to the clearings of the entire year. (A novice might think it was simply necessary to multiply the clearings of three months by four in order to have an estimate for the entire year, but such a method is not correct, since it does not provide for the seasonal changes before alluded to.) By making a study of the relation that these three months bear to the entire year for several years back, it is possible to make a very good estimate for the entire current year even if only three months are reported. Having made this estimate, one compares it with the total figures for previous years and forms an opinion as to the probable business conditions for the current year. If the study is dropped at this point, these figures would be of no value, but the merchant revises this estimate each month, as new figures are received, and also notices whether the revised figures are increasing or decreasing. In other words, by this second method, the one universally recommended, the merchant studies the statistics

to note whether each succeeding estimate is an increase or a decrease over the previous estimate. If the new estimate is an increase, this shows that business conditions are improving as marked by an upward line on the plot. If the new estimate is a decrease, it shows that business is decreasing, as marked by a downward line on the plot. If the new estimate is practically the same as the last one, this indicates that there may be no change either for the better or for the worse, as marked by a horizontal line on the plot.

The remaining point to be considered on the subject of bank clearings is the reason for separating the subject into the two main classes as per the preceding tables. The reason for this subdivision is as follows: The clearings of New York alone are more than one-half of those of the entire country. If these clearings were simply a result of commercial business transactions, that is, the transactions of merchants, manufacturers and business men, there would be no reason why the New York clearings should not always be included with the clearings of other cities. The facts of the case, however, show that an exceedingly large percentage of New York clearings is affected by the transactions of bankers or is intimately related to the stock exchange transactions. This may be clearly shown by plotting two lines, one for the transactions of the New York Stock Exchange and the other for the bank clearings of New York. These lines, although very "zig-zag," are almost parallel to each other, and when one rises the other follows, and vice

versa. For this reason, during dull times on the stock exchange, bank clearings of the United States *including New York* may show a decrease, even though general business throughout the country is increasing, while during a very active period on the New York Stock Exchange, the bank clearings of the entire United States *including New York*, may show an increase, even though general business throughout the country is decreasing.

For this reason, in order to judge correctly the general business of merchants and manufacturers throughout the country, it is best to consider the bank clearings of the United States *with the exception of New York City*. If the figures for the United States *with the exception of New York City* have been properly studied and a conclusion drawn, it is also well then to note the figures for the entire country, including New York City. If the figures for New York City confirm the conclusion arrived at when not including New York City, then the result may be considered absolutely correct. The most successful merchants *tabulate, each month, the sum of the figures for New York and those excluding New York, after first multiplying the latter by 4 or 5, as suggested by Prof. Irving Fisher of Yale University.*

Note 1. There are two exceptions which may be taken to using bank clearings as an index. One is the fact that, as banks consolidate, the ratio is improperly changed; the other is that bank clearings are increased by the increased cost of commodities and securities, as well as by the increased volume of trade.

The first objection need not be taken very seriously as consolidations have always been in process, and considering the number of banks, the number of consolidations are no greater to-day than ever. If this is so, the bank clearing figures are perfectly satisfactory for comparative purposes.

The other objection, that an increase in clearings does not necessarily mean an increase in the *volume* of business, is a valid criticism. It is, therefore, well to always note the change in the Commodity Price Index, which index shows how much allowance should be made when studying bank clearings.

Moreover, as a check on one's conclusion, it is well to note railroad tonnage and especially idle car figures, as the latter are wholly dependent upon the *volume* of business, and are independent of rates or prices. In fact, the only exception that can be taken to idle car figures is that the cars are increasing so much in size and the published figures do not include the cars in repair shops.

Note 2. It is pointed out also that clearings reported by one city may be reported also by another city. For example, the business of a branch house may be reported in the clearings of the city in which it is located and again as part of the business cleared by the main office in the home city. Just what the percentage of duplication is, it is impossible to determine, but it is probably small compared with the total clearings of the country.

Now that the Federal Reserve System is in full operation, it is possible to get a record of total bank transactions which is even more comprehensive than bank clearings.

CONCLUSIONS RELATIVE TO BANK CLEARINGS

1. *During a Period of Business Depression.*

(a) An increase signifies that trade is improving.

(b) A decrease signifies that trade conditions are growing worse.

(c) No change signifies that trade conditions are remaining fixed.

2. *During a Period of Improvement Following a Period of Depression.*

(a) An increase signifies that trade is continuing to improve.

(b) A decrease signifies that the improvement has temporarily been checked.

(c) No change shows that progress is very slow.

3. *During a Period of Prosperity.*

(a) An increase shows that trade conditions are very prosperous, although too great an increase under such conditions forecasts trouble.

(b) A decrease shows that a change is taking place and business is decreasing.

(c) No change at this point often is a sign that a change is about to take place.

4. *During a Period of Decline Following a Period of Prosperity.*

(a) An increase signifies a temporary check in the decline.

(b) A decrease is the natural movement and signifies no improvement.

(c) No change shows uncertainty or possibly serves to delay the coming depression.

BUSINESS FAILURES

Every great crisis has been made known to the public by one or more large failures, sometimes accompanied by the exposure of dishonest methods, sometimes by political or national calamity; more often by the failure of some bank or number of banks in endeavoring to finance industries or new corporate undertakings. So failures,—that is large, single failures,—stand as signals of sharp crises, and the beginning of depression. They may be followed by other large failures and many small ones, so quickly that the total both in the number of failures and in liabilities for the panic year is swelled, as in 1893, far above the limits of other years just preceding and following it; or the failure record may move slowly and may require more than a year for any great change. Failure statistics, therefore, are of use principally in determining the probable length of a period of depression as shown by the following figures. From these, it will be seen that after a crisis in no case has prosperity returned until failure statistics have again become normal.

FAILURE STATISTICS FOR THE UNITED STATES

Table I

Compiled from figures furnished by R. G. Dun & Co.

Year	No. of Failures	Liabilities in Millions	Year	No. of Failures	Liabilities in Millions
1857	4,932	291.8	1864	520	8.6
1858	4,225	95.7	1865	530	17.6
1859	3,913	64.4	1866	1,505	53.8
1860	3,676	79.8	1867	2,780	96.7
1861	6,993	207.2	1868	2,608	63.7
1862	1,652	23.0	1869	2,799	75.0
1863	495	7.9	1870	3,546	88.2

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Year	No. of Failures	Liabilities in Millions	Year	No. of Failures	Liabilities in Millions
1871	2,915	85.2	1896	15,088	226.1
1872	4,069	121.1	1897	13,351	154.3
1873	5,183	228.5	1898	12,186	130.7
1874	5,830	155.2	1899	9,337	90.9
1875	7,740	201.0	1900	10,774	138.5
1876	9,092	191.1	1901	11,002	113.1
1877	8,872	190.7	1902	11,615	117.5
1878	10,478	234.4	1903	12,069	155.4
1879	6,658	98.1	1904	12,199	144.2
1880	4,735	65.8	1905	11,520	102.7
1881	5,582	81.2	1906	10,682	119.2
1882	6,738	101.5	1907	11,725	197.4
1883	9,184	172.9	1908	15,690	222.3
1884	10,968	226.3	1909	12,924	154.6
1885	10,637	124.2	1910	12,652	201.7
1886	9,834	114.6	1911	13,441	191.1
1887	9,634	167.6	1912	15,452	203.1
1888	10,679	123.8	1913	16,037	272.6
1889	10,882	148.8	1914	18,280	357.9
1890	10,907	189.9	1915	22,156	302.3
1891	12,273	189.9	1916	16,993	196.2
1892	10,344	114.0	1917	13,855	182.4
1893	15,242	346.8	1918	9,982	163.0
1894	13,885	172.9	1919	6,451	113.2
1895	13,197	173.2			

For example, note in the above table the year 1857, both in number and liabilities. Note that the crisis is indicated in the amount of liabilities, for while in 1858 the number of failures is still large, there is a reduction of liabilities amounting to more than 67 per cent. The next three years show depression by a relatively large number of failures; but they are of lessening average amount of liabilities. That statistics of failures may indicate not only the length but the general character of a depression is proved particularly well from the course they take from the crisis year of 1873 to the height of the depression in 1878, and for a shorter

period from 1893 to the culminating year of 1896. From the preceding table it is also evident that, while the average of liabilities per failure is less, the *number* of failures is often larger toward the end of a depression than during the crisis year.

FAILURE STATISTICS FOR THE UNITED STATES

Table II

Compiled by figures furnished by R. G. Dun & Co.

Year	Number Failures	Liabilities	Average Liabilities	Liabilities per firm in business	Per cent failing
1875	7,740	\$201,060,333	\$25,960	\$339.78	1.21
1876	9,092	191,117,786	21,020	305.15	1.33
1877	8,872	190,669,936	21,491	302.60	1.36
1878	10,478	234,383,132	22,369	259.49	1.55
1881	5,582	81,155,932	14,530	108.65	.71
1882	6,738	101,547,564	15,070	129.94	.83
1883	9,184	172,874,172	18,823	210.23	1.06
1884	10,968	226,343,427	20,632	261.94	1.21
1885	10,637	124,220,321	11,678	137.28	1.16
1886	9,834	114,644,119	11,651	124.60	1.01
1893	15,242	346,779,889	22,751	290.65	1.28
1894	13,885	172,992,856	12,458	155.25	1.25
1895	13,197	173,196,060	13,124	145.06	1.09
1896	15,088	226,096,834	14,992	190.57	1.31
1900	10,774	138,495,673	12,854	119.63	.92
1901	11,002	113,092,376	10,279	94.63	.90
1902	11,615	117,476,769	10,114	94.85	.93
1903	12,069	155,444,185	12,879	122.33	.94
1904	12,199	144,202,311	11,820	111.33	.92
1905	11,520	102,676,172	8,193	78.75	.85
1906	10,682	119,201,515	11,159	86.52	.77
1907	11,725	197,385,225	16,834	139.75	.82
1908	15,690	222,315,684	14,169	153.58	1.08
1909	12,924	154,603,465	11,964	104.01	.80
1910	12,652	201,757,097	15,947	133.16	.80
1911	13,441	191,061,665	14,215	125.28	.81
1912	15,452	203,117,391	13,145	129.85	.98
1913	16,037	272,672,288	17,003	168.68	.99
1914	18,280	357,908,859	19,579	216.19	1.10
1915	22,156	302,286,148	13,644	180.49	1.32
1916	16,993	196,212,256	11,547	114.90	.99
1917	13,855	182,441,371	13,168	105.26	.80
1918	9,982	163,019,979	16,331	95.44	.58
1919	6,451	113,291,237	17,561	66.21	.38

From this second table we have another view of the usefulness of failure statistics. While, as in Table I, the panic years are also plainly marked in Table II, by the percentage of failures to the total number of firms in business, Table II, in addition, shows something new relative to business conditions.

Thus we find that up to 1878 the possibility of loss, that is the ratios of "liabilities" to the "number of firms actually in business," was large or increasing from year to year, as was also the case from 1893 to 1896; while, on the other hand, the effects of the crisis of 1903 gave place very quickly to prosperous conditions, surpassing any known in thirty years previous. Furthermore, from the "per cent of failures" to the firms in business we find, that such figures as 11,002 for the failures, in 1901 and 10,478 for 1878 mark two degrees of depression more widely different than they would seem at first glance, and that the high number of 11,725 of 1907, or even 15,690 in 1908, indicate conditions much less severe than does the 7,740 of 1875.

But as the study of the past, however interesting as pure history, is here to be regarded only as a means of understanding the significance of current changes, the points above mentioned are of value only in connection with the present day figures.

The figures of the year 1907 are of special interest in this connection. This year is known as a "panic year," and the events of the months following

October with its signal failures of certain New York banks have become a part of history closely joined to later problems. While it is true that not one, but all factors, must be weighed together in estimating the comparative position of 1907 among critical periods, merchants, bankers and investors find something of special value in statistics of failures.

Statistics of the year are available in different forms. Divided into months, as is the customary way for merchants to compile them, there is meaning to be found in the year's record on lines similar to those used in the annual tables. The following figure for liabilities, expressed in millions, serve as illustrations: The "number" is omitted from these tables, but will be found on the statistical sheets* from 1912 to date as will also the percent of failures to firms in business. If additional tables are desired, the "percent to the firms in business" is recommended.

Table III

LIABILITIES EXPRESSED IN MILLIONS

Month	1902	1903	1904	1905	1906	1907
Jan.	\$14.312	\$12.978	\$18.483	\$10.417	\$11.952	\$13.628
Feb.	11.302	10.907	15.812	9.780	10.859	10.283
Mar.	8.117	10.458	13.770	9.964	10.949	8.163
Apr.	7.359	11.811	13.136	8.056	8.059	11.082
May	9.109	12.314	9.817	8.907	12.992	9.965
June	10.173	8.326	8.469	8.777	7.850	16.445
July	6.932	16.751	8.812	6.148	6.919	12.334
Aug.	8.068	10.877	10.491	6.140	8.821	15.197
Sept.	10.031	7.229	12.864	8.039	6.255	18.935
Oct.	10.851	18.387	10.525	6.751	10.553	27.414
Nov.	9.276	16.422	8.535	8.866	11.980	17.637
Dec.	11.941	18.978	13.481	10.823	12.006	36.296

*Tables on the statistical sheet are an average of figures by Dun and Bradstreet. The above figures are by Dun alone.

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Month	1908	1909	1910	1911	1912	1913
Jan.	\$27.099	\$14.008	\$32.015	\$24.090	\$19.770	\$22.972
Feb.	27.084	16.734	27.435	17.086	21.477	28.141
Mar.	21.542	13.718	13.628	18.474	21.763	25.718
Apr.	20.316	16.825	17.752	16.924	16.874	18.445
May	13.643	14.383	9.590	13.469	15.277	16.883
June	14.708	12.607	11.817	13.652	12.847	20.787
July	14.222	9.527	13.790	12.150	16.098	20.325
Aug.	23.782	9.620	12.442	11.116	16.153	20.848
Sept.	17.298	8.446	15.933	11.900	13.280	22.662
Oct.	15.898	12.529	18.977	19.270	15.762	20.245
Nov.	12.599	9.812	11.324	15.266	15.646	24.199
Dec.	14.139	14.625	17.039	17.659	18.164	31.480

Month	1914	1915	1916	1917	1918	1919
Jan.	\$39.374	\$49.641	\$25.863	\$18.283	\$19.279	\$10.736
Feb.	22.354	32.405	18.744	16.618	12.829	11.489
Mar.	21.493	23.658	16.885	17.406	17.672	13.595
Apr.	20.549	43.518	18.383	12.587	14.271	11.450
May	23.447	21.053	19.466	11.772	13.135	11.957
June	57.881	18.313	11.929	18.055	10.607	9.483
July	20.377	18.935	11.647	17.240	9.789	5.507
Aug.	43.468	17.734	20.129	18.085	7.985	5.932
Sept.	23.018	16.208	11.569	11.903	17.407	8.791
Oct.	29.702	25.522	10.775	12.812	13.980	6.872
Nov.	25.489	15.694	14.105	13.835	13.815	9.177
Dec.	30.899	19.605	16.745	14.044	12.249	8.300

This table gives examples of what may serve as types of years. Thus, 1903 had what was called "the rich man's panic," beginning with the stock market in the summer of that year and continuing into the next as shown very clearly by the table. The presence of business trouble is first indicated in July of 1903, when the amount of liabilities is very much increased; and this increase and this ratio remain practically unbroken for ten months. Normal years, also, such as 1905 and 1906, show heaviest liabilities between October and March, any increase between these points coming just before or just after the fiscal year.

While Table III is not in itself sufficient, the points just raised show the practical value of such figures. Even without knowing anything of the exact causes, a man with these figures at his hand

could not have failed to think a little when, in the report for June, 1907, liabilities ran over 100% higher than in 1906 and nearly as much higher than 1905. As the new figures were received each month, and liabilities for the month of September reached an aggregate of nearly \$19,000,000 compared with \$8,039,947 for the same number of failures in September, 1905, surely the change in ratio could have told something very definite as to the approach of bad times. By the quickest, roughest estimates, the course of affairs can be very plainly traced by having these failure statistics at hand.

While to obtain accurate comparisons of the progress of the current year, as compared with others, more close calculating of the percentage in gain or loss *per firm in business is always required*, yet such work yields a good return.

The following table (Bradstreet's) is also of interest in connection with analyses of failures.

PERCENTAGE OF FAILURES AND LIABILITIES CLASSIFIED AS TO CAUSE—UNITED STATES (PER CENT)

Number					Liabilities				
Failures due to....	1907	1906	1905	1904	1907	1906	1905	1904	
Incompetence.....	22.6	22.3	24.4	23.1	8.9	15.5	21.6	14.1	
Inexperience.....	4.9	4.9	4.8	5.1	3.2	2.2	2.1	3.2	
Lack of capital.....	37.1	35.9	33.4	32.2	18.4	30.9	33.0	31.8	
Unwise credits.....	2.3	2.6	3.5	3.4	3.1	2.1	4.2	4.8	
Failures of others....	1.4	2.0	2.2	2.5	3.3	8.8	4.5	8.2	
Extravagance.....	.9	1.0	1.1	.8	.5	.9	1.2	.7	
Neglect.....	2.5	2.2	2.9	3.1	.5	1.5	1.1	1.6	
Competition.....	1.2	1.0	1.5	1.3	.4	.4	.9	1.0	
Specific conditions..	16.3	17.3	16.3	19.1	51.7	17.9	15.5	22.7	
Speculation.....	.7	.8	.7	.8	4.9	3.6	7.7	5.3	
Fraud.....	10.1	10.0	9.2	8.6	5.1	16.2	8.2	6.4	

Number					Liabilities				
Failures due to....	1911	1910	1909	1908	1911	1910	1909	1908	
Incompetence.....	27.0	26.6	24.2	21.6	23.5	21.3	20.9	16.0	
Inexperience.....	4.1	4.4	4.9	4.0	2.2	1.9	2.6	1.8	
Lack of capital.....	31.4	33.9	34.5	34.2	28.3	27.9	28.6	27.2	
Unwise credits.....	2.0	1.7	1.9	2.0	2.2	1.9	3.2	3.7	
Failures of others....	1.3	1.0	1.2	1.8	4.2	3.1	5.9	5.0	
Extravagance.....	.9	.7	.9	1.0	1.2	.5	2.3	.9	

	Number				Liabilities			
Failures due to	1911	1910	1909	1908	1911	1910	1909	1908
Neglect.....	2.2	2.5	3.0	2.2	1.3	.9	2.1	1.8
Competition.....	2.9	2.6	2.5	1.8	4.8	1.9	1.4	1.7
Specific conditions..	16.9	14.4	15.3	18.9	20.7	21.1	20.2	31.3
Speculation.....	.7	1.0	.8	1.0	2.7	7.4	4.4	4.7
Fraud.....	10.6	11.2	10.8	11.5	8.9	12.1	8.4	6.9

	Number				Liabilities			
Failures due to	1915	1914	1913	1912	1915	1914	1913	1912
Incompetence.....	29.9	28.0	28.6	30.2	17.3	13.4	18.4	26.8
Inexperience.....	5.4	5.6	6.1	4.6	2.4	1.9	2.0	3.0
Lack of capital.....	27.5	29.4	29.2	29.7	28.4	31.6	24.9	33.5
Unwise credits.....	2.4	2.5	2.6	2.0	3.9	3.2	16.0	2.6
Failures of others...	1.0	1.8	1.9	1.3	9.2	16.7	11.4	4.9
Extravagance.....	.6	.9	.8	.7	.6	.6	.6	.9
Neglect.....	1.9	2.2	2.0	2.0	1.0	1.0	.7	1.0
Competition.....	5.7	3.0	2.3	1.9	3.3	1.2	.9	1.3
Specific conditions..	18.9	16.4	15.3	16.5	24.7	19.8	14.0	13.8
Speculation.....	.4	.7	1.1	.8	2.2	3.5	2.7	3.4
Fraud.....	6.3	9.5	11.1	10.3	7.0	7.1	8.4	8.8

	Number		Liabilities			
Failures due to	1916	1917	1916	1917	1918.	1919
Incompetence.....	33.2	35.5	21.8	25.3	28.9	22.6
Inexperience.....	6.0	6.8	4.4	5.2	4.7	4.8
Lack of capital.....	30.3	31.9	31.9	32.7	30.8	25.5
Unwise credits.....	1.9	1.9	2.6	1.8	1.8	3.9
Failures of others...	.9	1.0	4.6	5.9	3.3	3.3
Extravagance.....	.6	.6	.6	.6	.6	1.2
Neglect.....	2.4	2.2	1.0	.8	.9	.8
Competition.....	4.2	2.1	2.5	2.1	.8	.8
Specific conditions..	13.4	.9	19.3	14.2	19.8	20.5
Speculation.....	.4	.4	3.9	1.5	1.2	2.3
Fraud.....	6.7	5.7	7.4	9.9	9.2	14.3

For example, if 1907 showed, as is claimed, 37.1% of failures due to lack of capital, and if figures show that this cause is increasing year by year, it means clearly that the beginnings of new enterprises must be increasingly well supported, as it grows more difficult to add to inadequate capital when money rates are high or when competition makes it imperative to expand. As inexperienced and comparatively incompetent heads must continually join the business ranks, constant watching of the details of failure statistics is a practical necessity for them as well as for those whose money is invested in their interests.

As Bradstreet's table excludes all losses except

those strictly commercial (that is, it includes only those failures involving loss to creditors of individual firms or corporations engaged in legitimate mercantile occupations), they cannot be compared, figure for figure, with the tables from other sources; but believing that the figures due to failure in insurance, real estate, brokerage, etc., do have a distinct effect upon general business conditions, the analysis of these also should be a part of a study of the whole subject.

Certain further facts should be mentioned here as bearing upon this question. One of these we have already suggested, namely: that as the country advances, statistics furnish evidence that the "commercial death rate" is growing less. The decrease is as yet not one-half of one percent, but the rate is being reduced from $1\frac{1}{2}\%$ maximum to something under 1%. Of course, we should like to believe that this is a permanent improvement in business intelligence, but this point the future alone can prove.

Another law recognized by merchants and already suggested in this discussion, is that small firms do not feel the effect of a panic or depression until some time after the effect is felt by the larger firms. For this and other reasons, the study of this subject is especially valuable as a guide and protection to small merchants and storekeepers.

In conclusion I will repeat that figures on business failures are of greatest value to all in determining what the length of the present "period" will be, and how soon one's own business and that

of others, in which he has greater or less investments of capital, may be expected to show a change. When the flood begins to subside from its high water mark, a study of the rate at which it is subsiding, and a knowledge of the condition of each tributary stream assists very much in estimating the time when seed may be planted in the rich bottom land, now under water, or *inversely* as the case may be. We need not carry this figure of speech further in order to show that it contains the idea upon which merchants rate the study of *Business Failures* as of fundamental importance to their progress. For such study is but a part of a system by which they may know exactly the conditions upon which the next move should be based, and upon the result of which depends the subsequent course of the business life of each individual.

The following conclusions are suggested relative to "Business Failures."

1. *During a Period of Business Depression.*

(a) An increase signifies that the depression is not ended.

(b) A decrease, after a large increase, signifies improvement.

(c) No change signifies that caution is still necessary.

2. *During a Period of Improvement Following a Period of Business Depression.*

(a) An increase in failures signifies that the improvement has been temporarily checked.

(b) A continued decrease signifies continued improvement.

(c) No change signifies that caution is still necessary.

3. *During a Period of Prosperity.*

(a) An increase in failures, especially of large concerns, forecasts a decline.

(b) A great decrease signifies the need of caution.

(c) No change signifies nothing of importance.

4. *During a Period of Decline Following a Period of Prosperity.*

(a) An increase signifies no immediate improvement.

(b) A decrease signifies a temporary check in the decline or an improvement.

(c) If there is no change the figure need not be considered.

IMMIGRATION FIGURES AND LABOR CONDITIONS

The general subject of labor conditions is of importance in diagnosing present business conditions and in forecasting changes which may be expected. But labor interests involve so many factors and include so wide a field of investigation that, with the statistics at present available, it is absolutely impossible to compile figures that are sufficiently complete to tabulate for comparative purposes. It is hoped that some day either the labor unions or

the government will find some practical means of keeping exact records of the number of men out of work, the rate of wages in effect and other items necessary for this purpose.

At present, the only complete figures are the census reports compiled once in ten years, and partial figures of some of the states reported only once in five years, but neither set of figures is of much use to the business man. There are also certain states which, in connection with the public employment bureaus, publish a classified list every week or month entitled "applicants desiring work"; but these lists are very incomplete and their records are of little more practical use than are the similar records kept by the leading charitable institutions. If every city or charitable institution did the work thoroughly and kept the dead matter weeded out, their records would be worth while, although they might cover but a small portion of the country. The same could be said of the labor union figures. These, if kept properly and accurately for a definite period and area, would be very valuable to manufacturers and business men; but under present conditions, they are at the most only suggestive, and not fit for precise analysis. Of all available statistics, those coming from the Commissioner of Labor may be most depended upon; and though monthly reports of the same sort would be of distinct value for the purposes of fundamental statistics, no such satisfactory figures can now be obtained.

For either determining the present trend or fore-

casting the approaching conditions, only figures which can be used for *comparative* purposes are of value. It is not necessary to have monthly figures covering a large section of the country, but *they must cover the same section of the country* at each statement. It makes little difference whether the reports are issued weekly or monthly; but it is of vital importance to systematic work that *each report should cover the same period of time*, — that is, either one week or one month regularly. Therefore, while there are to-day many organizations preparing figures which may, after a time, become of distinct value for comparative purposes, none of them have, until recently, reached this point, — with the possible exception of those from the Immigration Department of the United States.

The immigration figures are issued monthly, each report covering the same ports, and these figures are carefully tabulated by all systematic manufacturers and merchants.

One of the valuable features of the present day method of studying fundamental statistics under twelve general headings is that under each general heading or group, sub-topics can be added at any time, extending over an increasing amount of subject-matter. For example, the subject of this group is "Labor Conditions" and at the present-time the only figures tabulated are those on immigration; but as soon as suitable reports from the labor unions, charitable institutions, or other sources are obtainable, additional tables can be inserted for these additional figures. All such sub-

jects, accurately reported, will contribute to an exact understanding of the condition of labor in this country. In other words, in the preparation of the Compositplot, the same amount of weight will continue to be given to "Labor Conditions" as formerly, but in arriving at decisions as to labor conditions more factors will be considered.

As a barometer of labor conditions, immigration and emigration figures previous to the war were extremely good. In peace times the steamship lines maintain a balance in the supply of labor between the United States and Europe. Labor, like water, seeks its own level, when both living expenses and wages are considered. Of course, if it costs five times as much to live in New York as in Italy, the Italian laborer will not come to this country for simply five times the wages that he receives at home, provided the *demand* for labor is the same in each country. Therefore, living expenses, as well as wages, must be considered. On the other hand, if the Italian can obtain wages in New York equal to ten times what he will receive in Italy, he will board a steamer for the United States, even with the expenses in New York five times as great as at home. Such high wages the Italian may always obtain in America in times of prosperity, and especially in times just preceding the culmination of a period of prosperity.

Conversely, when this period culminates, the demand for labor decreases, wages decrease and the Italian boards a steamer and returns to Italy. Therefore, as the Government keeps a careful record

of when the immigrant enters the country and when he leaves, this report is an extremely good barometer of unskilled labor conditions in the United States. Of course, under almost any circumstances, there are more people coming into a new country, like the United States, than there are going out, but the size of this excess number is very sensitive to changing conditions in the country as a whole.

By studying and comparing the figures of the past twenty years, it will be seen that a crisis or depression in business conditions came soon after very high figures for immigration were reached. It is likewise true that there was an improvement in business conditions when, during a period of depression and very little immigration, there began to be an increase in immigration. In other words, very large numbers of alien arrivals during a period of prosperity may be counted as one of the factors signifying a culmination of such a period of prosperity. Conversely, a very low number of alien arrivals during a period of depression is one of the factors significant of a readjustment to a sounder basis.

As is the case with most of the others of these subjects studied by bankers and merchants, an increase or a decrease does not at all times mean the same thing under all circumstances. Sometimes an increase is a dangerous sign and sometimes a decrease is a dangerous sign. These things cannot be reduced to a rule of thumb, but the merchant must use his judgment to a certain extent. The rule given above, however, is almost infallible. As years go on, it is more and more necessary also to

tabulate *emigration* figures in order to ascertain the net change.

There is also another reason why these various figures are of interest, namely: because the number of aliens entering or leaving the country is not only a barometer of business conditions, but it is also influential in the trend of such conditions. When a foreigner enters this country, he usually brings a little money, for he knows that he will need a place in which to sleep while here and must have some food and clothes. On the other hand, when leaving the country he takes from circulation a certain amount of money which is almost invariably many times what he brings into the country. In addition, he directly reduces the income of some landlord and the business of some small grocer and dealer in second-hand clothing.

More important than this is the fact that the arrival of many immigrants during a period of prosperity insures a plentiful supply of labor. This makes possible an extension of business undertakings that would otherwise be impossible. This tends to accelerate the pace and accentuate the unhealthy conditions that a period of prosperity creates. Hence the reaction will be greater and more severe than if these people had not entered the country. Immigration has thus tended to accentuate the extremes of the business cycle. During 1916 and 1917 the inability to get immigrant labor materially retarded the war boom.

In the absence of war or other artificial restric-

tions the following conclusions are suggested relative to immigration figures.*

1. *During a Period of Business Depression.*

(a) An increase after a distinct decrease shows that conditions are improving.

(b) A continued decrease signifies that as yet there is no improvement.

(c) No change signifies that conditions are at a standstill.

2. *During a Period of Improvement Following a Period of Business Depression.*

(a) An increase signifies continued improvement.

(b) A decrease signifies no immediate improvement.

(c) No change signifies no definite trend.

3. *During a Period of Prosperity.*

(a) A great increase signifies no further improvement or a decline.

(b) A decrease signifies that the corner is being turned and a decline may be expected, and thus calls for caution.

(c) No change signifies continued improvement.

4. *During a Period of Decline Following a Period of Prosperity.*

(a) An increase signifies a temporary improvement.

(b) A decrease signifies no improvement.

(c) No change signifies nothing definite.

*These figures have special bearing on the demand for unskilled labor in the United States.

CHAPTER VII

SUBJECTS RELATING ESPECIALLY TO MONETARY CONDITIONS

MONEY IN CIRCULATION

THIS subject may, at first thought, seem uninteresting and of little concern to the merchant or manufacturer; yet, as a matter of fact, the "Amount of Money in Circulation" is of vital interest not only to the merchant and manufacturer, but also to the humblest store-keeper and day laborer.

The trade of the corner grocery store is regulated by the amount of money in circulation in the neighborhood; and the amount of money in circulation in the neighborhood is dependent upon the amount circulating in the entire country. As the local banks in every small town have deposits in some large city such as New York, Chicago or St. Louis, money cannot be abundant in one city and scarce in another, except for a very short time. The banks of the various cities are so related through the great banking institutions of the large cities, that money — like water — immediately seeks its own level. As a result, all parts of the country must prosper or suffer in accordance with the amount of money in circulation. The store-keeper must, therefore, study figures of the entire country, and not simply the conditions in his own town or in his own neighborhood.

Many a mill has been closed and many a laborer been thrown out of employment because employers could not obtain enough actual money to pay wages. In times of prosperity such conditions are hard to conceive; nevertheless, they have happened many times. Sometimes mills continued to operate by paying their employees by check, although this is a very unsatisfactory method unless the checks can be readily cashed. We know of one city in Massachusetts where for several weeks in 1907, all of the factory hands and clerks were paid by checks, and moreover by checks marked "Payable only through Clearing House." Checks so marked cannot be cashed. The holders can only deposit them in the bank and draw new checks against them; and, since these new checks were also marked "Payable only through Clearing House," it was still impossible for the employees to obtain their cash. As 95% of the employees had no bank account, the only practical method was for each to give his check to one of the local store-keepers, receiving credit for the amount. As the man was obliged to leave the full amount of the check at one store, he found it advisable to select a large department store, carrying dry goods, groceries, medicines and other goods. The result was that the business of the small store-keepers, excepting that derived from their regular "charge" customers, was almost ruined during this period; the business of a store, the cash sales of which ordinarily amounted to \$100 a day, decreased to only \$10 a day. This is but one illustration; it shows, nevertheless, how vital an

interest even the humble classes have in the amount of money in circulation.

It is of equal importance to the large merchants and to the manufacturers. The small retailer who buys only what goods he can sell immediately, ceases purchasing as soon as his business diminishes. This immediately affects the business of the manufacturer, who in turn ceases to purchase from the large producers. Since the small manufacturer buys new material only as needed for actual manufacture, he ceases to purchase in direct proportion as he reduces his help. The great merchants and manufacturers do not feel the effect, possibly until later; but when the blow does come, they feel it to a greater extent than the small dealer. It may be plainly seen, therefore, that the amount of money in circulation directly affects every one, whether laborer, clerk, small store-keeper, merchant, large manufacturer or the railroad company which transports for all.

The Terms Defined.

In the discussion of this subject, two different "amounts" are referred to, viz.:

1. The *gross amount* of money per capita, whether hoarded or in use.
2. The *net amount* of working money in circulation.

These two amounts may be defined as follows:

"The *gross amount* of money per capita" includes all money in the United States whether it is in the bank or buried in the ground, at work or idle. All money in the safe deposit boxes and in the pockets

of individuals is counted in this item. This amount of money in circulation formerly stood at about \$35* per capita, based on the estimated population of the United States. The gross amount of money per capita simply represents the total of the gold and silver coins and bills and bank notes in existence, wherever located in the United States. It has been estimated that in order to keep this figure in the vicinity of \$34 or \$35 per capita, it is necessary to create or import about \$50,000,000 net in coin and bills each year.

The "net amount of working money" means the amount in actual use in making payments from day to day plus the sum of checks drawn against bank deposits. When a farmer deposits in his bank, money received from the sale of cotton in Liverpool, he increases the gross amount of money in circulation but not the net unless the bank loans the money out to someone else. When he checks this out to an American firm in payment for fertilizer he increases the net amount of active money but not the gross. Should he draw this money out and hoard it he does not affect the gross amount of money in the country but may indirectly affect the net by curtailing the loaning power of the bank.

But "the net amount of working money in circulation" is affected in another way, namely: by the amount of money that each man is carrying in his pocket. If a man carries eleven dollars in his pocket instead of one dollar, he seldom realizes that the act is affecting the financial condition of the

*Has risen since European War to \$56.99 (June, 1920.)

country; but if 15,000,000 working men in the United States should do this same thing, it would make a difference of \$150,000,000 in the net amount of working money in circulation, or a difference of \$500,000,000 in the banking resources of the country. Thus the net amount of working money in circulation represents the amount which is actually in the banks or actually at work in commerce and industry; it does not include idle money stowed away in pocketbooks or safe deposit boxes.

Experience has shown that the "*net* amount of working money in circulation" cannot be forecasted by figures, but is dependent rather upon sentiment. In other words, instead of being dependent upon the financial condition, it is dependent rather upon the sentiment of the people. This net amount in circulation may remain practically constant for years until some large failure, scandal or rumor of war comes, when the people lose confidence and money stops circulating. In such cases, everybody holds all he has in his possession and free circulation is stopped or retarded. Thus the *net amount* of working money is often independent of the *gross amount* of money in circulation. Should a rumor be published in the morning papers that some great financial institution is in a critical condition, the *net* amount of money in circulation would immediately be affected to a greater extent than would be possible through years of legislation; but the *gross* amount of money would remain constant. Furthermore, such rumors, failures or scandals are the

best warnings of impending contraction of the net amount of money in circulation. The study of statistics in such instances is of little value. In other words, as soon as such a thing happens, the merchant may be reasonably certain that his trade will be diminished, and the effect of his curtailment will be felt by the manufacturers, the middlemen and the railroads.

On the other hand, the merchant should be equally on the watch for the time when confidence will be restored and when the people will decide to part with the money they have been hoarding. As it is human nature to hoard money in case of trouble, it is also human nature to forget this trouble quickly. Moreover, people seem unable to withhold money from circulation beyond a certain length of time; they become uneasy under the loss of interest, and it finally occurs to them that their money is in more danger in their houses than when deposited in a bank. Thus periods of financial stringency, which were caused by the temporary withdrawal of money from circulation, were invariably followed by a great increase in the net amount of working money. *Nevertheless, the business of the merchant does not increase directly in proportion to the increase of the net amount of working money.* While business falls off as soon as the *working* money decreases, the reverse is not true.

When mills are closed and people are out of employment, they acquire frugal habits, and after the mills again start, they do not at once begin to spend; but they deposit their savings in a bank.

The fact remains, nevertheless, that after these periods of fright, money becomes very plentiful with the banks and interest rates become correspondingly low, with a slow but gradual increase in business. As the efficiency of money depends upon its rapidity of circulation, a contraction in the net amount of working money always causes a decrease in general business which requires some time to return to a normal state.

In the case of the "*gross amount of money per capita*," entirely different laws prevail. To quote from Theodore E. Burton's admirable book entitled "*Crises and Depressions*": — "*Paradoxical as it may seem, the starting point for crises and depressions may be found in abundance rather than in scarcity, whether in money or in capital.*" Here he refers to the "*total gross amount of money per capita*" or the figures which are studied under fundamental statistics. The best statistics available may be obtained from tables prepared each month by the U. S. Government. In general, these figures usually show a continued increase up to a certain point, at which time a panic or a depression comes over the country. *This is due to the fact that panics and depressions are so often caused by over prosperity. Therefore, this gross amount of money per capita is a good barometer of prosperity.* If the gross amount of money in circulation, as reported by the government, shows a steady increase per capita for several years and the country is prosperous — mills running overtime, labor in great demand, and everybody happy and contented — then the merchant and manufac-

turer should be on the watch for a turn in the tide. In other words, too large an amount of money per capita is sure to be followed by a period of disaster and trouble. As "pride cometh before destruction and a haughty spirit before a fall," so it is likewise true that "a large amount of money appeareth before a panic and a period of luxury before a period of depression."

The following conclusions may be of interest relative to net amount of working money in circulation*:

1. *During a Period of Business Depression.*
 - (a) An increase signifies declining money rates, and more satisfactory conditions.
 - (b) A decrease signifies higher money rates and less satisfactory conditions.
 - (c) No change signifies nothing important.
2. *During a Period of Business Improvement.*
 - (a) An increase forecasts better conditions.
 - (b) A decrease forecasts a check or setback.
 - (c) No change suggests nothing of importance.
3. *During a Period of Prosperity.*
 - (a) A large increase calls for caution.
 - (b) A sudden decrease signifies higher money rates and forecasts reaction.
 - (c) No change signifies continued prosperity.
4. *During a Period of Decline Following a Period of Prosperity.*
 - (a) An increase checks the decline, but forecasts continued unsatisfactory conditions.

*The reader should study "The Purchasing Power of Money," by Irving Fisher, Professor of Political Economy at Yale University. The Macmillan Co.

(b) A decrease forecasts higher money rates and continued decline.

(c) No change suggests caution.

REPORTS OF THE COMPTROLLER OF THE CURRENCY

Each national bank is required to make five reports a year to the Comptroller of the Currency. The reports are verified under oath by the president and cashier and are attested by at least three directors of each bank. They give in detail the resources and liabilities of all national banks at a date specified by the Comptroller, and always previous to the date of the call. Each report must be mailed to the Comptroller within five days after the request is made for it. Such reports are the basis of a most useful examination of the banking situation, as they include not only figures from all national banks but also annual supplementary figures relative to other banks.

These figures should be studied both independently and in their relation to one another. In other words, the "ratios" should be studied and compared. This is one of the principal features of these reports as used in connection with the study of "Fundamental Statistics." They will be found more fully explained under the headings of "Loans" "Reserves," etc.

LOANS OF THE BANKS

In analyzing reports of the Comptroller of the

Currency, four distinct lines of investigation are followed, namely:

(a) The ratio of bank "Loans" to bank "Resources."

(b) The ratio of bank "Loans and Investments" to bank "Resources."

(c) The ratio of "Reserves" of the banks to the "Deposits."

(d) The ratio of the "Reserves" of the banks to the "Resources."

These four distinct subjects should be studied independently before making any deduction or forecasting business conditions. It is also instructive to study the relation of loans to deposits. Then (a) should be compared with (b), and (c) with (d). In order to save time and space, the first two are here treated together, and the second two are treated together under another heading.

Bank Loans: Bank loans include notes, discounts, overdrafts and all other forms of so-called liquid assets. Banks when first organized were expected to serve two purposes: they were to receive money on deposit and they were to loan it to depositors, with the understanding that all deposits could be withdrawn and all loans called for payment at any time. The most ideal conditions are to be found where banks still keep most closely to the standard above laid down. All of the assets of a bank other than cash on hand, etc., should consist of loans that can be liquidated within six months. Therefore the term "Loans and Discounts" would include all notes, etc., which are either payable on demand or

are payable within six months or a year at the utmost.

Investments: In reality, a bank is loaning money to a corporation whether it purchases its fifty-year debenture bonds or its six-months' notes. In either case the security is the same and the interest may be the same. For an investor, the fifty-year bonds if properly secured, are often a more practical purchase than the notes; but for a bank the same statement cannot be made. Strict adherence to the original principle of banking often demands that a bank shall refuse to purchase the bonds of a corporation of which it may willingly accept the notes.

Notes when purchased by banks may be listed under the head of "Loans and Discounts," but bonds so purchased must be listed under the head of "Investments." The national law forbids the purchase by national banks of real estate, except as a building site, or real estate mortgages, because real estate cannot be readily sold, even though in many cases it is the safest form of investment. Logically there seems to be no reason why a national bank should be allowed to buy fifty-year bonds and forbidden to purchase improved real estate, but the fact that the prohibition is made shows that the spirit of the law is against all forms of permanent investments. Therefore, by such reasoning, all stocks, bonds and notes, which do not mature for six months or more, come technically under the head of "Investments." As there is no law which states exactly the difference between "Loans" and

"Investments," banks differ regarding the definition, many banks placing under the head of loans, even such short term notes as do not mature for two or three years.

Resources: The "Resources" of a bank are the same as the resources of any individual or nation. They include the notes, discounts, loans, stocks, bonds, real estate and other property which the bank holds. When a bank makes an appraisal of its total assets, figured on a conservative basis, the resulting figure represents the "Resources." The greater the proportion of "Loans" to "Resources," the less normal are banking conditions.

We think that the above definitions in themselves are sufficient to convince the reader of the truth of the following statement:

(1) *The banking situation of the country becomes more critical as the proportion of loans to resources increases, and improves as the proportion of loans to resources decreases.*

If all national banks confined themselves to loans and discounts, and made no permanent investments, excepting to the extent of their capital, it would be a very easy matter to judge the conditions in accordance with the above rule. As, however, practically all banks place a large amount of funds in more permanent investments, that item must be independently analyzed and the above rule must be supplemented by the following:

(2) *With a given ratio of loans to resources, conditions become more critical as the proportion of investments to resources increases, and conditions im-*

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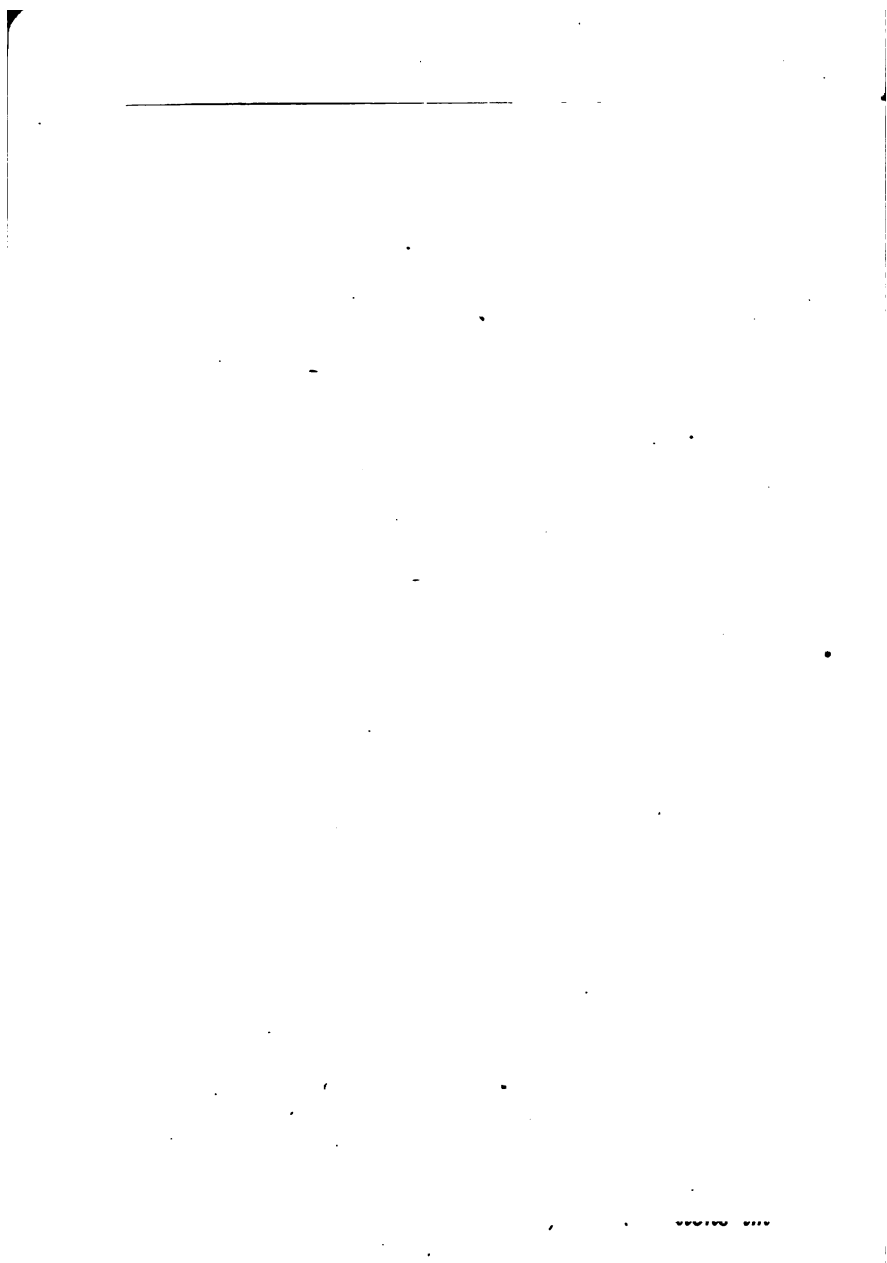
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prove as the proportion of investments to resources decreases.

In other words, provided a constant relation exists between the funds loaned and the total resources, the general banking situation is strengthened whenever a bank disposes of long term bonds and reinvests the money in high grade commercial paper; conversely the general banking situation is weakened whenever a bank purchases long term bonds with money received from deposits or from the payment of high grade commercial paper. Therefore, anyone studying these conditions should note two things:

(1) Whether the proportion of "Loans" to "Resources" is increasing, decreasing, or remaining fixed.

(2) Whether the proportion of "Investments" to "Resources" is increasing, decreasing, or remaining fixed.

Although the most careful students consider these terms separately, we think it is generally safe to combine the two ideas in the one general rule, as follows:

As the ratio of "Loans and Investments" to "Aggregate Resources" increases, the banking situation becomes more critical; and as the ratio of the two combined items to "Aggregate Resources" decreases, the banking situation improves.

The accompanying table shows the record of the national, state and private banks and trust companies of the United States which have reported to the Comptroller since 1865. A study of these

figures, with the other subjects, would have made it possible to forecast nearly every period of depression and every period of prosperity which this country has experienced since the Civil War. These figures cannot be expected to foretell the exact time when crises or panics will occur, owing to sudden catastrophes such as earthquakes, wars, assassinations, etc., but they invariably forecast the large swings. They clearly show when conditions are becoming abnormal and expansion is going too far. These figures date back only to the Civil War, as the system of national banks was not established until 1863. Consequently, this is the only period which gives satisfactory data to form a basis for any theory regarding the relation of banking conditions to general business, and conversely, the effect of business conditions upon banking conditions. The latter clause is added because, although strained banking conditions cause a recession in general business, it has always been found true that great activity in business has caused strained banking conditions.

Therefore, when business has been very active and the country very prosperous, bankers may surely anticipate strained and critical banking conditions. Conversely when strained banking conditions have existed for a certain period, business men may be sure of a reaction. The figures show that after a period during which there was a more or less noticeably rapid increase in the ratio of "Loans and Investments" to "Resources," there followed invariably a period of depression until the

ratio was reduced to a normal point. From 1887 to 1897 the "Loans and Discounts" increased only 43% and the "Investments" 73% against an increase in aggregate resources of 50%. This was a normal and healthy increase and all observers were sure that the country was preparing for a period of marked prosperity, but between 1897 and 1907 the "Loans and Discounts" increased 155% and the "Investments" 153% against the increase in "Resources" of 151%. It was due to these figures that the bankers and investors who carefully study all fundamental statistics were sure that the country was entering a period of decline. Such figures showed a period of depression to be absolutely necessary in order to give the banks an opportunity to recuperate and again enjoy healthy and normal conditions. These figures are still more dangerous when it is considered that during the period between 1887 and 1897 the aggregate "Resources" showed an increase of 50%, even though the market value of securities was not increasing.

During the ten years between 1897 and 1907, the increase in aggregate "Resources" was largely due to the inflated prices and the growing market value of securities held, and possibly not at all to larger numbers of investments. These changes, it is true, have been irregular rather than constant and have caused varying conditions of strength and weakness in the banking situation; but the figures plainly indicate that in 1906 banks were in a very weak condition with their investments over-extended. The above figures would appear somewhat different if

figures of all private banking houses, such as J. P. Morgan & Co., Kuhn, Loeb & Co., and others were included, but nevertheless they are sufficient.

Referring to earlier years, we see that in 1873 the ratio of "Loans" to "Resources" first exceeded 50% and in fact reached a ratio of 52.71%. Consequently, a panic occurred in that year. The ratio of "Loans" to "Resources" continued to increase to 54.13% and 54.55% in 1874 and 1875 respectively, and the prolonged depression was probably due to this continued increase. Moreover, this item remained practically unchanged until 1879 when the liquidation was completed. "Loans and Discounts," which in 1873 were \$1,439,900,000, after reaching \$1,748,100,000 in 1875, were reduced in 1879 to \$1,507,400,000. This condition of the banks enabled them to loan money at low rates of interest and again accommodate legitimate enterprises. Consequently, business increased marvelously from 1879 to 1883.

During this period, however, loans had again rapidly advanced,—as is shown by the table,—and remained practically fixed between 1883 and 1885. During this period, that is in 1884, a sharp panic occurred which might readily have been anticipated. Although distress was felt in every part of the United States, it lasted only a short time in comparison with that of 1873. The banks were able to reduce their ratio of "Loans and Investments" to "Resources" so quickly that the ratio which stood at 77.96% in 1884 was reduced to 72.83% in 1885. Consequently, business became

again more active, mills resumed operation and railroad earnings began to increase.

In 1886, the new period of prosperity, with advancing prices, was in full swing. This movement continued without any marked change until the early nineties when "Loans" reached a very high proportion, 60.57%. Large crops in this country, with small crops abroad, helped to postpone trouble for a time, but a depression came in 1893 when the ratio of "Loans" to "Resources" was even higher than in 1890, namely 60.74%. All business men and investors who were then studying these figures were absolutely sure that a panic would ensue.

Another disturbance came in 1903 which, although short, was certainly severe. Railroad earnings decreased, mills shut down, many men were thrown out of employment and money rates were very high. Again the western farmer came to the rescue of the country, and owing to bountiful crops and other reasons, mills again started and business improved. This continued until 1907. During these years, however, there was no real improvement in the banking situation except for a short time. In 1904, money was very cheap, but only temporarily. Banking conditions became worse and worse so that students of the situation were sure that the improvement from 1904 to 1906 would be followed by a depression in 1907 when the banks might again have an opportunity to recuperate. This recuperation was completed in 1908, and very soon banking conditions were again normal. In 1914 the Federal Reserve Banking

System went into force—of this we treat in detail on later pages.

The great value of this data to the investor is self-evident. When the ratio of "Loans and Investments" to "Resources" is abnormally high, the country is abounding in prosperity and securities are selling at high prices, the wise investor sells his securities and places his money on deposit in strong banks. On the other hand, when the ratio of "Loans and Investments" to "Resources" * is low, and when, although business is dull and mills are not running, his general knowledge of the situation shows that fundamental conditions are sound, the investor will withdraw his money from the banks, purchase high grade stocks and bonds and hold them until business again becomes active.

While in the previous table we have given aggregate figures for all banks, in order to show general banking conditions, such figures are also of service relative to the condition of two or more banks. A depositor should select a bank whose ratio of "Loans" to "Resources" is comparatively small and should especially avoid banks with large "Investment" accounts, — so large as to show a policy not in agreement with sound management.

A very small figure for "Loans" is not a good sign, neither is a very large figure. The former signifies stagnation, the latter over-extension. It is important that the figure be normal, and that it bear a proper relation to the figure for "Deposits,"—

*Some prefer to substitute "Deposits" in place of "Resources" and in that way check their conclusions, as the "Loans" should not much exceed the "Deposits."

thus giving a sound, safe amount for "Reserve." See also the discussion of the Federal Reserve law, page 299.

The following conclusions regarding the ratio of "Loans" to "Aggregate Resources" are suggested. The same principles apply to the ratio of "Loans and Investments" to "Aggregate Resources."

1. *During a Period of Business Depression.*

(a) An increase in the ratio signifies renewed activity.

(b) A decrease signifies a further recession in business.

(c) No change signifies continued dullness.

2. *During a Period of Improvement Following a Period of Business Depression.*

(a) An increase in the ratio signifies increased activity.

(b) A decrease signifies a temporary recession.

(c) No change calls for special watchfulness.

3. *During a Period of Prosperity.*

(a) An increase in the ratio signifies that fundamental conditions are becoming unsound.

(b) A decrease tends to prolong the period of prosperity.

(c) No change signifies nothing of importance.

4. *During a Period of Decline Following a Period of Prosperity.*

(a) An increase in the ratio signifies further trouble.

(b) A decrease is the natural movement.

(c) No change calls for special watchfulness.

SURPLUS RESERVES OF THE BANKS

The figure for "Surplus Reserve" often indicates:

- (a) The Price of Money.
- (b) The Supply of Money.

The price is determined by the relation of the supply and the demand; that is, when more persons wish to borrow than to loan, interest rates advance; and when a larger number wish to loan than to borrow, the supply is greater than the demand and interest rates decline. For this reason, money rates are usually high during the periods of business activity and low during periods of depression. The *price* of money, however, is not as important a factor as the *supply*. In other words, provided the merchant can obtain the money when needed and in sufficient quantities, an abnormal interest rate is less harmful in its effects than the inability to get money at all.

A variation in the rates for borrowed money has a more direct effect upon the market for stocks and bonds than upon the market for merchandise. When the speculator can borrow money at three or four per cent to purchase securities paying five or six per cent, the temptation is to borrow and make the purchases, thus increasing the demand and consequently the market price for the securities. Under such circumstances, there is a profit on the "interest account," even though there is no increase in the value of the investments. On the other hand, this increased incentive to purchase does not exist when money commands six or seven per cent and securities are selling on a four or five per cent basis, for

then the "interest account" shows a loss. Those who have securities upon which they are borrowing money are tempted to sell them in order to stop the loss in interest. Consequently, the supply of securities exceeds the demand and the price declines.

As previously stated, this question of "interest rates" is entirely secondary to the question of "supply." It is not interest rates that cause the merchant to fail or the speculator to sacrifice his stocks, but rather his inability to renew his loans on any terms whatever. Many great periods of declining prices have been solely due to this cause, namely, a lack of supply of money, and the speculator is not the only one to feel the effect of such times. The weekly statement of reporting member banks, used in connection with the Federal Reserve bank statement, Comptroller's Reports and Foreign Money Rates, forms the best barometer of the *supply* of money. Previous to the Federal Reserve system the statement of the New York Clearing House Banks was the best barometer.

As to the current *price* of money, this may be definitely determined each day by referring to the money articles on the financial page of most daily papers. The figures under what is known as "call rates" or "call money" denote the rates which the stock exchange houses and bond dealers are required to pay for money on loans which may be called any day and on which the rates may change from day to day. Sometimes this figure is more and sometimes less than the figure for "time rates." "Time rates" apply to loans maturing at a fixed

date, such as six months or a year. When the bankers having money to loan think that all rates are to strengthen in the near future, then the call rate is less than the time rate, and when the bankers having money to loan think that all rates are to decrease in the immediate future, then call rates are higher than the time rates. Some of the shrewdest borrowers take time money when the bankers are encouraging the people to take call money, and vice versa, on the principle that the bankers know more about the situation than their customers. However, this question of money rates is too complicated to present here in detail, especially since as has been stated, the price of money can be easily ascertained at any time by referring to the daily papers.

The *supply* of money is the most vital question as, unlike the price, it is not so subject to manipulation. This supply, as above stated, was formerly best indicated by the weekly New York Bank Statement. This was simply a statement of the New York banks and did not include statements from any of the other twenty thousand banks in the United States, nor the great banking institutions of foreign countries. We now have what is in the way of becoming a complete weekly bank statement. It now includes the statements of over eight hundred of the principal member banks of the Federal Reserve System. From this statement we can note weekly the amount of available money and follow closely the expansion or contraction of credits, as shown by the relation between reserves and deposits, and between reserves and loans.

So long as the "Surplus Reserve" decreases, a corresponding increase in money rates may be expected; but if the "Surplus Reserve" increases each week, a decrease in money rates may follow. Since the demand for stocks often increases as the interest rate decreases, money and the stock market often strengthen with the publication of what is known as a "good bank statement," namely, a bank statement which shows an increase in the "Reserve Item." On the other hand, as an increase in money rates often forces a sale of stocks, due to the calling of the loans, a "poor bank statement" is often followed by a drop in the market prices. When the bank statement is published on Saturday, the change in interest rates may not come until the following Monday, or possibly later, but the speculator anticipates this by buying or selling on Saturday. The first sellers after a poor bank statement are supposed to obtain the best prices, and the first buyers after a very good bank statement are supposed to obtain their securities at the lowest prices.

All merchants should keep a monthly record of the "Reserve ratios" as per the first day of each month.

The following conclusions are suggested relative to the ratio of reserves to deposits.

1. *During a Period of Business Depression.*

(a) An increase signifies lower money rates but continued dullness.

(b) A decrease signifies higher money rates but improved conditions.

(c) No change signifies continued dullness.

2. *During a Period of Improvement Following a Period of Business Depression.*

(a) An increase signifies that the recovery in business is not very marked, and that continued low money rates may be expected.

(b) A decrease signifies continued improvement and is the forerunner of higher money rates.

(c) No change signifies uncertainty.

3. *During a Period of Prosperity.*

(a) A great increase signifies that prosperous conditions may be expected to continue, with no change in money rates.

(b) A great decrease is a danger signal and is always the forerunner of higher money rates.

(c) No change may signify either condition.

4. *During a Period of Decline Following a Period of Prosperity.*

(a) An increase tends to prolong present conditions and to lower money rates.

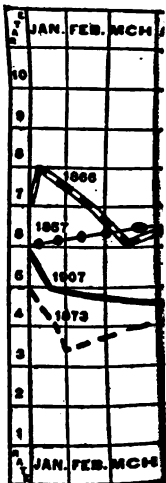
(b) A decrease is a sign that conditions are growing worse. Higher money rates may be expected.

(c) No change signifies uncertainty.

Before the enactment of the Federal Reserve Banking Act a large part of the reserves of national banks was kept either on deposit in Reserve Cities or in cash. The banks in reserve cities in turn kept their reserves partly in cash and partly in demand deposits in central reserve cities especially New York. Hence the ratio between cash in the banks and "Deposits" and between cash and "Resources"

was of great importance ~~in the banking~~

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From the Wall Street

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ments are not such good barometers of the monetary situation as they used to be. Students now give more attention to the statements of the Federal Reserve Banks and those of the member banks of the Federal Reserve System, which are issued weekly.

2. *During a Period of Improvement Following a*
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... the reserve cities in turn kept their reserves partly in cash and partly in demand deposits in central reserve cities especially New York. Hence the ratio between cash in the banks and "Deposits" and between cash and "Resources"

was of great importance for judging the banking situation.

The surplus cash always tended to gravitate to New York where it was employed partly in commercial loans. But chiefly these funds were loaned on stock exchange collateral for financing stock speculation. Any financial disturbance or any great general demand for money which causes the withdrawal of funds by the depositing banks in other sections, had a cumulative effect on the cash held by the New York banks. Hence the ratio between cash and resources and between cash and deposits of the New York banks in years past has always been an especially good indicator.

Under the Federal Reserve System, however, the banks which are members of the system now have to carry all of their legal reserves with the Federal Reserve Bank in their respective districts. To some extent country banks still deposit funds in New York, but as such deposits cannot be counted as legal reserves, they are not large. Under the present system the Federal Reserve Bank is the chief depository of surplus funds for each district. The Federal Reserve Banks have the authority to transfer funds between themselves in case of distress in any particular locality. Because of this new situation the New York bank statements are not such good barometers of the monetary situation as they used to be. Students now give more attention to the statements of the Federal Reserve Banks and those of the member banks of the Federal Reserve System, which are issued weekly.

Having already explained the relation that "Loans and Investments" bear to the money situation, let us study the effect that "Reserves" has on the money situation. Of course, it is usually true that the greater the amount of "Loans and Investments," the smaller the amount of "Reserves" and vice versa. For this reason the following rule is already self-evident.

The banking situation grows more critical as the ratio of reserves to deposits decreases, and the situation improves as the ratio of reserves to deposits increases.

National banks are now compelled by law to maintain a reserve on deposit with the Federal Reserve Banks equal to from 7% to 13% of their demand deposits and 3% of their short time deposits (according to the city in which the bank is located) and any amount over this required reserve is called a "Surplus Reserve." As this surplus reserve declines, money rates increase, merchants and manufacturers are limited in borrowing, and speculators are compelled to dispose of stocks and bonds in order to pay their loans. On the contrary, as the surplus reserve increases the banks become sounder and are ready to loan money to investors, manufacturers, and merchants at lower rates of interest. This subject is explained more in detail a few pages hence.

Periods of depression and prosperity in the past often could have been anticipated by a study of the ratio of "Cash" to "Deposits," since under the old National banking act reserves were held wholly in cash by the New York banks and largely in cash

by other banks. Whenever a great decline in the ratio of cash to deposits or aggregate resources occurred there always followed a period of contraction of credits; and conversely as this ratio increased lower interest rates have always followed. The following table shows the ratio of cash to the deposits of the National, State, Savings and other banks and trust companies from 1865 to date. Beginning with the year 1916 the figures for Reserves have been substituted for cash, owing to change above described.

Year	No. of Banks Reporting	Individual Deposits	Total Cash in Banks	Ratio of Cash to Individual Deposits
1865	1,960	\$641,000,000	\$199,400,000	31.11
1866	2,267	815,800,000	231,900,000	28.30
1867	2,279	876,600,000	205,600,000	23.45
1868	2,293	968,600,000	200,700,000	20.72
1869	2,354	1,032,000,000	162,500,000	15.74
1870	2,457	1,051,300,000	187,700,000	17.85
1871	2,796	1,251,600,000	194,000,000	15.50
1872	3,066	1,353,800,000	177,600,000	13.12
1873	1,968	1,421,200,000	218,200,000	15.35
1874	1,983	1,526,500,000	252,200,000	16.52
1875	3,336	1,787,000,000	238,700,000	13.36
1876	3,448	1,778,600,000	226,400,000	12.73
1877	3,384	1,813,600,000	230,500,000	12.71
1878	3,229	1,717,400,000	214,600,000	12.50
1879	3,335	1,694,200,000	216,300,000	12.77
1880	3,355	1,951,600,000	285,500,000	14.63
1881	3,427	2,296,800,000	295,000,000	12.84
1882	3,572	2,460,100,000	287,100,000	11.65
1883	3,835	2,568,400,000	321,000,000	12.50
1884	4,111	2,566,400,000	321,200,000	12.51
1885	4,350	2,734,300,000	414,300,000	15.15
1886	4,378	2,812,000,000	375,500,000	13.00

BUSINESS BAROMETERS

Year	No. of Banks Reporting	Individual Deposits	Total Cash in Banks	Ratio of Cash to Individual Deposits
1887	6,179	\$3,308,200,000	\$432,800,000	13.09
1888	6,647	3,422,700,000	446,100,000	13.03
1889	7,203	3,778,100,000	499,100,000	13.21
1890	7,999	4,062,500,000	478,300,000	11.77
1891	8,641	4,796,800,000	479,100,000	11.41
1892	9,338	4,664,900,000	568,400,000	12.58
1893	9,492	4,627,300,000	515,900,000	11.15
1894	9,509	4,651,200,000	688,900,000	14.81
1895	9,818	4,921,300,000	631,100,000	12.82
1896	9,469	4,945,100,000	531,800,000	10.84
1897	9,457	5,094,700,000	628,200,000	12.33
1898	9,485	5,688,200,000	687,800,000	12.09
1899	9,732	6,768,700,000	723,300,000	10.69
1900	10,382	7,238,900,000	749,900,000	10.36
1901	11,406	8,460,600,000	807,500,000	9.54
1902	12,424	9,104,700,000	848,100,000	9.31
1903	13,684	9,553,600,000	757,200,000	8.97
1904	14,850	10,000,500,000	990,600,000	9.90
1905	16,410	11,350,700,000	994,100,000	8.76
1906	17,905	12,215,800,000	1,016,400,000	8.32
1907	19,746	13,099,600,000	1,113,700,000	8.51
1908	21,246	12,784,511,169	1,368,300,000	10.70
1909	22,491	14,035,500,000	1,452,000,000	10.34
1910	23,095	15,283,400,000	1,423,800,000	9.32
1911	24,392	15,906,300,000	1,554,200,000	9.77
1912	25,195	17,024,067,607	1,572,953,479	9.24
1913	25,993	17,501,006,000	1,560,709,447	8.92
1914	26,765	18,557,978,467	1,639,219,163	8.83
1915	27,062	19,195,151,304	1,457,702,138	7.59
1916	27,513	22,844,801,601	1,486,118,322	6.51

Year	No. of Banks Reporting*	Individual Deposits	Total Reserves	Ratio Reserves to Deposits
1916	7,579	\$8,043,612,000	\$2,076,496,000	25.81
1917	7,604	9,299,541,000	2,310,360,000	24.85
1918	7,705	9,043,592,000	1,131,674,000	12.51
1919	7,785	10,574,838,000	1,211,079,000	11.46

*For National Banks only, whereas table above applies to all banks.
 Figures as of June report or thereabouts.

The following conclusions relative to the ratio of either cash or reserves to deposits are suggested:

(These general principles also apply to the ratio of "Reserves" to "Aggregate Resources.")

1. *During a Period of Business Depression.*

(a) After money has been cheap for some time, accompanied by large reserves figures, a continued increase in the ratio of "Reserves" to "Deposits" signifies that business remains at a standstill.

(b) A decrease—under the above conditions—may be a good sign, showing that business is reviving.

(c) No change signifies that conditions are stationary.

2. *During a Period of Improvement Following a Period of Business Depression.*

(a) After money rates have been very low for some time, a further increase in the ratio of "Reserves" to "Deposits" often means that there has been another recession in business.

(b) A decrease under such conditions usually signifies renewed activity.

(c) No change signifies a period of hesitation.

3. *During a Period of Prosperity.*

(a) An increase in the ratio of "Reserves" to "Deposits" tends to prolong the period of prosperity.

(b) A decrease tends to shorten the period of prosperity.

(c) No change signifies a period of hesitation.

4. *During a Period of Decline Following a Period of Prosperity.*

(a) An increase in the ratio of "Reserves" tends to delay the depression.

The present banking law has changed the reserve requirements and the method of handling these reserves so as to deprive these subjects of some of the importance they formerly possessed. Under the present system the member banks are required to keep reserves as follows:

1. "Country" banks — not less than 7% of the aggregate amount of its demand deposits and 3% of its time deposits.

2. If in a reserve city a net balance not less than 10% of its demand deposits and 3% of its time deposits.

3. If in a central reserve city, a net balance equal to not less than 13% of total demand deposits and 3% of time deposits.

It is provided in every case that the amount of required reserve shall be kept as a balance to the credit of the member bank in the Federal Reserve Bank of its district.

Beside this reserve kept in the Federal Reserve Bank, it is obvious that any bank must keep a fund of cash on hand as "till-money" to meet the daily demands of its business.

Experience has shown that about 4% or 5% of the deposits is ordinarily a safe amount for this purpose. All reserves or unemployed funds beyond this reserve of "till-money" tend to concentrate in the Federal Reserve Banks. Hence much of the importance formerly possessed by the relation between cash and deposits, and cash and resources of the

national banks now attaches to these items in the combined statement of the twelve Federal Reserve Banks.

In this connection it is important to watch carefully the ratio of "Federal Reserve Notes to Gold Reserves of Federal Reserve Banks." If these notes are secured wholly by gold they are for all practical purposes gold certificates and merely take the place of the gold which is deposited for them. But to the extent that these notes are secured against deposits of commercial paper they represent an expansion of currency. So long as the expansion of currency is accompanied by a corresponding increase in volume of production, no effect on prices should ensue. But such an expansion not accompanied by a corresponding increase in the volume of production is sure to lead to higher commodity prices. A change in the general level of commodity prices has an extremely important effect on earnings of business enterprise and upon the business cycle. (See chapter 4).

DEPOSITS OF THE BANKS

The rule governing the ratio of "Reserves" to "Deposits" holds good, except when deposits are increasing too rapidly, owing to increased prices of securities, real estate and commodities. Besides studying the ratio which we have described, the deposits should be watched independently for changes, as deposits should not increase too rapidly. The weekly statement of the New York banks will serve this purpose. A very simple illustration

shows how large deposits may be reported at considerable risk, but without any intentional misstatement of facts.

A few years ago a miser died in a certain town, which may be called Graniteville. The executor of his estate found \$5,000 in gold stored away in the house, and deposited it with the Graniteville Trust Company, thereby increasing the deposits of that company by \$5,000. Shortly after, John Smith borrowed of the trust company \$4,500 of the amount deposited in order to buy stone with which to build a block of buildings. The local granite company, having outside income sufficient to pay its operating expenses, deposited the entire \$4,500 received from Smith with the Graniteville Trust Company; so the deposits of the trust company became \$9,500 greater. Soon after, Mr. Jones came into the bank and borrowed \$4,200 with which to buy stone to build a block in another part of the town, and upon receipt from the granite company of Jones' \$4,200 the granite company made another deposit with the trust company increasing the deposits to \$13,700.

The following day a Mr. Brown, by means of a loan from the trust company, bought stone, and the granite company further increased its deposits to \$17,500. This same method of procedure was continued until the \$5,000 in gold which was originally deposited resulted in increasing the deposits of the trust company by \$50,000 and the loans by \$45,000. Moreover, this \$5,000 enabled the granite company to suppose it had \$45,000 in cash on deposit in the trust company, and provided for the building of

several stone blocks in the city. In other words, the deposit of this \$5,000 in gold resulted in creating an apparent wealth in Graniteville of about \$100,000. This story shows not only the risks of great increases in "deposits," but also the importance of gold importations in times of stringency, owing to the advantage of having on hand as much currency as possible.

When the miser's estate was settled, this \$5,000 was turned over to his only daughter, who had the same hoarding disposition as her father. She immediately withdrew in gold the \$5,000 from the Graniteville Trust Company and placed the same in a safe deposit box with the following result. The Graniteville Trust Company, in order to show its proper "Reserve," was obliged to demand payment of all the loans made to Smith, Jones, Brown, and the other men. In order to pay these loans, all of these men were obliged to sell the buildings which they had erected and, in order to protect the price of granite, the granite company was obliged to purchase these buildings, which necessitated the withdrawal of their deposits from the trust company. Thus the withdrawal of this \$5,000 in gold resulted in a \$50,000 decrease in the deposits of the trust company, caused the \$45,000 of cash assets of the granite company to vanish, and caused half a dozen or more citizens to lose their property, and possibly enter bankruptcy.

The principle should be clearly kept in mind when studying the "Deposit" item of the bank statement. Large "Deposits" are not necessarily a

healthy sign. Neither very large nor very small "Deposits" are normal. The best bank statement is the one where the figures for "Deposits" are normal and bear a proper relation to "Loans," thus showing a proper "Surplus Reserve."

MEMBER BANK STATEMENTS

Since the inauguration of the Federal Reserve System the plan of bank statements has been very much improved. The following is a table of the items upon which a representative number of certain member banks report each week. The statement given was for June 11, 1920. Although only about 800 out of 8,800 member banks report for this statement, they are the larger banks and represent approximately 80% of the total reserve of the Federal Reserve members.

Number of reporting banks	812
U. S. Securities Owned	\$1,658,305,000
Loans secured by U. S. war obligations	1,040,215,000
Loans secured by other Stocks and Bonds . .	3,095,337,000
All other Loans and Investments	11,254,011,000
Total Loans and Investments	17,047,868,000
Reserve with Federal Reserve Bank	1,428,040,000
Cash in Vault	373,439,000
Net Demand Deposits	11,594,053,000
Time Deposits	2,670,523,000
Government Deposits	52,021,000
Bills payable with Federal Reserve Bank . .	866,280,000
Bills rediscounted with Federal Reserve Bank	1,987,133,000

Explaining the items in the order in which they are given:

"Unites States Securities Owned" represent primarily liberty bonds and certificates of indebtedness. They show the varying weight of the burden of government financing which the banks carry.

The loan items are highly important. Loans are divided into three classes, according to the nature of their security. (1) Loans secured by United States war obligations show the amount of war paper still held by the banks. (2) Loans secured by other stocks and bonds reflect the trend of financing in the security markets. (3) "All Other Loans and Investments" represent very largely commercial loans.

"Reserve Balances with Federal Reserve Banks:" As explained in the preceding pages, only reserves which are held with the Federal Reserve Banks are counted in the members' legal reserve. This item, together with the "Cash in Vault," represents the liquid resources of the bank. In calculating ratios between reserves and deposits or reserves and loans the reserve item should include cash in vault.

"Net Demand Deposits" represent deposits subject to check without notice, as contrasted against "Time Deposits" which are not subject to check. For practical purposes, however, ratios between loans and deposits and reserves and deposits can be calculated without considering "time deposits," except to set aside the 3% reserve against them. In a panic it is the withdrawal of *demand* deposits which determines the severity of the crisis.

"Time Deposits" are more in the nature of deposits of a savings bank, the depositor being required to furnish 30 days' notice before he can withdraw his funds. "Government Deposits"—still another classification—during the war assumed large proportions but have since declined and should fall off gradually as the government's activity in business decreases.

Bills payable with Federal Reserve Bank, together with Bills Rediscounted with the Federal Reserve Bank indicate the amount of indebtedness which the member banks have with the Federal Reserve Bank and shows the extent to which they have had to resort to the Federal Reserve Banks for assistance.

In interpreting the above figures in this post-war period, look especially for the trend of the banks' loans and note the kind of security behind these loans. This will show what progress, if any, is being made toward credit and currency deflation. The item "loans and investments" also should be compared with the reserves of the member banks and, also reserves should be compared with the net demand deposits of the member banks. These ratios have approximately the same meaning as the ratios of loans to cash and cash to deposits under the old banking system.

* * * *

In some ways the New York bank statements are still useful and they should still be watched in conjunction with the other statements. The items "loans" and "deposits" are the most indicative, showing whether the prevailing tendency is toward expansion or contraction. The item

"surplus reserves," however, is not as valuable as it used to be under the old system, because the banks can increase their legal reserves almost at will, simply by rediscounting more paper with their Federal Reserve Bank. Consequently "surplus reserves" do not now have the same significance as formerly when they represented the limit of the bank's power of loan expansion.

THE COMPTROLLER'S REPORTS UNDER THE FEDERAL RESERVE SYSTEM

In the items of the Comptroller's Reports, which cover the whole country, certain changes have also occurred which students must take into account when comparing current figures with past figures. Loans have greatly increased. The reduction in reserve requirements theoretically released about \$500,000,000 in cash, against which more than \$2,000,000,000 in loans could be made which would not have been possible under the old system. The importation of about \$1,137,944,000 of gold in 1915 and 1916 was also a strong factor for expansion in loans. Between the new law and these gold imports, loans of the national banks during the first year and a half under the new system increased nearly \$1,000,000,000 and war financing has since caused them to increase much further.

"Cash" is much smaller. Whereas under the old system banks were required to hold 6%, 12½% or 25% of their deposits in cash (according to the class of bank), they must, under the new system, hold only 7%, 10%, and 13% respectively of their

demand deposits and 3% of their time deposits in the Federal Reserve Bank, and only such cash as till money as the daily demands of business compel: usually about 4% or 5%. According to distribution of deposits on October 31, 1914, therefore, the new law authorizes an average reduction of about 8% in cash holdings, but bankers will probably not find it practicable or wise to hold so little cash on hand. However a large reduction in "cash" has already taken place under the new system.

"Investments" have not been changed a great deal by the Federal Reserve system. While one of the chief aims of the system is to turn the banks from long term investments, such as bonds, etc. (which constitute "Investments"), to short term business paper, still many banks continue to carry a "back log" of good bonds among their holdings. Since the new bank law went into effect a large amount of bond buying was done by all classes of banks, but this was not due (directly, at least) to the new system, but rather to the obligation laid upon the banks to help the government finance the war. The longer the war lasted the greater was the amount of government securities that the banks were obliged to carry. This development, however, was a result of war rather than of any change in the banking system.

"Aggregate resources" are expanded on account of the increase in the "loans" item. "Surplus" was not directly affected by the new system. The "surplus" of a bank, as in any other business concern, is the "nest egg" which it saves out of its

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earnings, and it is not expected that the earning capacity of the banks will be greatly altered. Deposits of course are much larger.

The above are simply suggestions as to the allowance which should be made for the effect of the new system. The war has greatly complicated the situation. Care must be taken, therefore, in comparing the current figures with figures previous to 1914.

THE FEDERAL RESERVE BANK SYSTEM

For many years it was evident that the banking system of the United States was inadequate to meet the great financial needs of the country, not only due to certain defects but because the old system lacked certain necessary provisions which go to make an efficient banking system. Although the new law embodies changes which are far reaching and of great importance, still its framework is for the most part that of the old banking system, the good features of which have almost without exception been retained. Briefly, the new system has five prime purposes which are named below, although it also seeks to make many other important corrections.

(1) The creation of a joint mechanism for the extension of credit to banks which possess sound assets (especially in times of emergency) and which desire to liquidate them for the purpose of meeting legitimate commercial, agricultural, and industrial demands on the part of their clientele.

(2) The creation of an elastic currency which will contract and expand directly with the demands of business; also the ultimate retirement of the present bond-secured currency, with suitable provision for the fulfillment of government obligations to bondholders.

(3) The establishment of a public discount market for commercial paper and a better market for farm land mortgages which will furnish the merchant, the manufacturer and the farmer with better facilities with which to care for their financial needs.

(4) The provision for better extension of American banking facilities in foreign countries to the end that our trade abroad may be enlarged and that American business men in foreign countries may obtain the accommodations they require in the conduct of their operations.

(5) To establish a more effective supervision of banking in the United States and to secure the co-operation of the nation's banking power for the mutual protection and profit of the banks and the public.

In each of the above aims is embodied the desire to utilize the credit of the country to its greatest extent, at the same time providing against dangerous inflation.

The greatest defect in the old system was in the matter of bank reserves. First, because of the lack of centralization of reserves which would combine the power of all the country's banks to withstand the strain of financial crises. Hitherto each bank had been rather a unit in itself. By law it was required to reserve a certain percentage of its deposits, part of which had to be held in its own vaults while the remainder could be deposited with banks of either of the three central reserve cities, New York, Chicago or St. Louis, and also in reserve cities where it drew about 2% interest. This resulted in a large accumulation of funds in these cities, especially in New York where they were loaned to a large extent against stock exchange collateral. In case of sudden financial stringency,

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the outside banks were unable to call in their reserves because the central reserve city banks themselves could not liquidate their funds.

The Federal Reserve system has attempted to correct this condition by providing a series of twelve great reservoirs, one reservoir for each district, from which the banks of that district can draw freely in time of need. These reservoirs are called Federal Reserve Banks. In reality each reserve bank is an association in itself, having as members all of the national banks and any other banks which wish to join it. Instead of these member banks depositing a portion of their required reserves in New York, Chicago or St. Louis banks, they will eventually carry them with their respective Federal Reserve Bank. Instead of having to depend simply upon their reserve in an emergency, member banks can at once convert their commercial paper by having it rediscounted with the Federal Reserve Bank. The proceeds they may have credited to their accounts, thus creating a balance with the Federal Reserve Bank which counts as reserve, or they may take out Federal Reserve notes to pay out over their counters as cash.

Thus the great advantage to the member banks in "pooling" their reserves with the Federal Reserve Banks is at once evident. All of our worst panics in the past have started in a single section, and, like a great fire, have spread over the country because other depositors, becoming frightened, began to draw their balances from their banks, causing the so-called "runs" and creating a general panic.

By extending the proper aid to the banks first affected, the worst features of our nation-wide panics could have been quenched with comparatively little difficulty.

To accomplish its next prime object, that of supplying an elastic currency, the new law has provided a currency which can be based partly on commercial paper. This currency is known as *Federal Reserve notes*. These notes are issued only by Federal Reserve Banks to their member banks in return for gold or eligible paper which their member banks deposit with them. Thus when business activity increases, as in the fall of the year, the amount of commercial paper offerings will increase so that collateral for the new currency will automatically become available. Moreover, as business demands decrease, the currency will also decrease; for when the discounted paper which is furnished as collateral falls due, it must be collected. Since a member bank has indorsed the paper, the reserve bank will presumably deliver it to the member bank for collection and the latter will, in so far as possible, deliver national bank notes, reserve bank notes or Federal Reserve notes. If, however, business demands still continue heavy when the collateral paper falls due, the member bank may substitute other collateral in its place or the Federal Reserve Bank may keep the Federal Reserve notes outstanding thru the security of its gold reserve.

As to the national bank notes now outstanding, it was provided that after December 23, 1915, and for

twenty years the Federal Reserve Banks will, in reality, take over the national bank notes (at the rate of not more than \$25,000,000 a year), paying the member banks par value for the government bonds which now secure said notes. In order to fill the gap in the currency left by retiring the national bank notes, the Federal Reserve Banks may issue *reserve bank notes* in their place. These must not be confused with the Federal Reserve notes. The reserve bank notes are the same as the old national bank notes except that they are issued only to the Federal Reserve Banks which can take any amount of them by depositing an equal par amount of United States bonds with the Treasurer of the United States. These notes are intended to fill the need of a minimum circulating medium, which fluctuates very little and has no need for elasticity. Their advantage over the national bank notes is that they can readily be retired, being controlled entirely by the Federal Reserve Banks.

The third major purpose of the Federal Reserve Act is to facilitate the financing of legitimate industrial, commercial and agricultural transactions. To this end it has given eligible commercial paper precedence over every other form of credit and has made it legal for certain national banks to purchase farm real estate mortgages. Commercial paper has been made the very basis of the new currency. Banks should now be willing to take a large line of commercial paper which meets the requirements for rediscount with the Federal Re-

serve Banks, since, in case of emergency, they can immediately turn it into cash with which to pay their depositors.

The requirements for eligibility to rediscount which are imposed on commercial paper are very important. They place it on a basis of the character of the maker as well as on his financial standing. The requirements are so framed as to make it easier for the man of ability and character to obtain the credit to which he is rightly entitled. All of the great influence of this important section of the Act has been turned to the fostering of productive enterprise and to discouraging the sort of speculation which is unproductive and harmful. Such a fundamental change in the banking practice of a country must necessarily come about rather gradually, *but the principle of the new system is economically sound and there is good reason to believe that it will ultimately be successful.*

To facilitate the financing of foreign trade, the Act provides that member banks of the system will be allowed to deal in foreign acceptances and to establish foreign branches, a radical departure from the old policy. Briefly, foreign acceptances will be used as follows: A merchant in this country who is buying wool in Argentina will go to a bank here and get a letter of credit which he will send to his buyer in Argentina. His buyer will pay for the wool by a draft on the American bank in dollars instead of pounds sterling as heretofore. That draft, when it comes to this country, is accepted by the American bank and then is sold in the open

market. When it becomes due, the merchant can pay it at his own bank. The practice heretofore has been that the United States bank would give the merchant in this country a letter of credit drawn on either a German or English banker, payable in one of those two countries. Besides the commission which the United States merchant had to pay, which amounted in some cases to four or five separate commissions, he was obliged to buy exchange in this country, converting dollars into the foreign medium to pay that draft when it became due. Besides running the risk of conversion, he lost on an average of about ten days' time through his having to remit. While the development of a foreign acceptance market in this country will doubtless be slow, there is good reason to believe that this provision in the new law will eventually become a great factor in building up our foreign commerce.

All of the provisions described above have aimed at the fullest employment of the nation's finances. The question now arises, "What is to prevent a tremendous over-expansion of credit, now that the bars are down?" This has been the subject of much discussion which really only the coming years can definitely settle. Important among the safeguards which have been provided is the one that only gold or high-grade commercial paper (as defined by the Federal Reserve Board) is acceptable as collateral for Federal Reserve notes. The paper must have not longer than ninety days before maturity, and except in the case of "bills of exchange

drawn in good faith against actually existing values" no bank can lend in excess of 10% of its capital and surplus to any one firm or individual. Also there are provisions regarding bank examinations and reports.

These restraints in themselves, however, could never prevent inflation. *The great responsibility for safety lies with the bankers and the officials of the system.* First, all loans will be carefully scrutinized by the individual bankers. If, however, the situation gets beyond their control, the reserve bank of the district will take a hand. Rates for rediscount will be raised and commercial paper offered as collateral will be more carefully scrutinized. Finally, if over-expansion continues, the Federal Reserve Board, which will keep a close watch wherever trouble is evident, will reject the Reserve Bank's applications for notes, and insist that a higher rate of discount be charged the member banks of the district affected, and if outside help is needed, it will permit or require the other Reserve Banks to rediscount for the Reserve Bank of the district in which over-expansion is threatened.

In short, the supervision of the nation's banking by men of ability and experience is the law's greatest provision against inflation and there is good reason to believe that it will prove effective, just as it has in the leading nations of Europe. Perhaps instead of describing this great provision of the system last, we should have placed it first, for it promises a new era in the nation's banking.

In the few pages devoted to this subject, no attempt has been made to describe more than the main features of the law, for nearly all of the details of organization are shown on the accompanying chart more clearly than we could describe them. If, however, the reader wishes a still more complete discussion of the law, we would refer him to the admirable book by Professors Conway and Patterson, entitled "The Operation of the New Bank Act," also "The Federal Reserve Act" by C. W. Barron, and to the Act itself, which is in very readable form.

CLEARING HOUSE CERTIFICATES

Although there is nothing in the new law which prohibits the use of Clearing House Certificates, the provision made for elasticity of currency is so comprehensive that recourse to Clearing House Certificates in the future is not probable. However, some facts from an article which appeared in *Van Norden's Magazine* relative to these certificates will show the part which they have taken in previous panics.

"An issue of Clearing House Certificates was authorized by the Associated Banks of New York City for the ninth time in their history, and the fifth time since the Civil War, Saturday morning, Oct. 26, 1907. These certificates are a kind of emergency currency; they have never been authorized by law, and are used only between banks; they stand midway between promissory notes secured by collateral and asset currency.

"The first time such certificates were authorized was in November, 1860. Banks in different states had then just suspended payments. November 12 there was a panic on the Stock Exchange, with declines of from 8 to 12 points in the prices of stocks. With a view to stopping the panic, the New York banks decided to be more liberal in making loans. To increase their resources, they appointed, November 21, a committee of the Clearing House to receive from banks in their membership, and hold for them, New York and United States government bonds, and to issue therefor certificates for 75 per cent of their value which would be accepted at the Clearing House in payment of balances. To insure the redemption of this paper as soon as the emergency passed, the holders were charged 7 per cent interest. The plan was successful in stopping the panic. A period of liquidation ensued. From January 5 to August 17, 1861, the specie deposits doubled and the bank loans were reduced from \$129,000,000 to \$108,700,000.

"Within a few months thereafter, the Associated Banks of New York, at three different times, issued Clearing House certificates to enable them to subscribe for new issues of United States bonds which could be paid for only in specie. Although these certificates were issued for patriotic reasons, all those subsequently issued in times of panic, have been of substantially the same form as those first issued in 1860; but since 1873 the rate of interest has been 6 per cent.

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"The statistics of these issues by the Associated Banks of New York City are given in the following table:"

CLEARING HOUSE CERTIFICATES ISSUED IN
NEW YORK

Year	Date of First Issue	Date of Final Cancellation	Total	Maximum Out- standing at any Time
1860	Nov. 23	Mar. 9, 1861	\$ 7,375,000	\$ 6,860,000
1861	Sept. 16	Apr. 28, 1862	22,585,000	21,960,000
1863	Sept. 15	Feb. 1, 1864	11,471,000	9,608,000
1864	Feb. 29	June 13, 1864	17,728,000	16,418,000
1873	Sept. 22	Jan. 14, 1874	26,505,000	22,410,000
1884	May 15	.....	24,915,000	21,885,000
1890	Nov. 12	Feb. 7, 1891	16,645,000	15,205,000
1893	June 21	Nov. 1, 1893	41,490,000	38,280,000
1907	Oct. 26	Mar. 28, 1908	101,060,000	88,420,000
1914	Aug. 3	Dec. 1, 1914	124,695,000	108,185,000

IMPORTS OF MERCHANDISE INTO THE
UNITED STATES

Connected with fundamental statistics and very closely related to one another are the three following subjects:

Imports of Merchandise into the United States.

Exports of Merchandise from the United States.

Balance of trade between foreign countries and the United States.

Each of the three subjects is absolutely dependent upon the others and, were it not for the separate tables connected with each subject, it would doubtless be simpler to treat all three in one comprehensive section entitled "Imports, Exports, Trade Balances and Volume." Owing, however, to the fact that it is absolutely necessary for the banker

or merchant to divide the figures into three separate tables and not allow them to be combined in any way, each is here treated independently.

No detailed definition need be given of the imports of the United States except that the word import refers to the valuation of the raw material, manufactured goods and all other products purchased from abroad and entering any port or crossing any boundary of the United States. It may be mentioned also that although the figures published by the Government are correct for *comparative* purposes, they are, as a matter of fact, low. For this there are two reasons: first, there is a large quantity of goods brought into this country of which no record is ever made; and secondly, the "values" are placed by the importers at the lowest possible figures in order that the charge for duty will be as little as possible.

(Figures prior to 1867 are given for the fiscal year ending June 30. After that year they are for the calendar year.)

TABLE OF UNITED STATES IMPORTS

Year	Imports	Per Capita	Year	Imports	Per Capita
1860	\$353,616,119	\$11.25	1873	\$595,248,048	\$14.27
1861	289,310,542	9.02	1874	562,115,907	13.13
1862	189,356,677	5.79	1875	503,153,936	11.43
1863	243,335,815	7.29	1876	427,347,165	9.47
1864	316,447,283	9.30	1877	480,246,300	10.37
1865	238,745,580	6.87	1878	431,812,483	9.07
1866	434,812,066	12.26	1879	513,602,796	10.52
1867	371,476,175	10.23	1880	696,807,176	13.88
1868	368,006,572	9.94	1881	670,209,448	13.06
1869	438,455,894	11.60	1882	752,843,507	14.36
1870	461,132,458	11.97	1883	687,066,216	12.81
1871	573,111,099	14.47	1884	629,261,860	11.48
1872	655,964,699	16.15	1885	585,868,673	10.49

IMPORTS OF MERCHANDISE

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TABLE OF UNITED STATES IMPORTS (Cont.)

Year	Imports	Per Capita	Year	Imports	Per Capita
1886	\$663,429,189	\$11.57	1903	\$ 995,494,327	\$12.42
1887	708,818,478	12.09	1904	1,035,909,199	12.71
1888	725,411,371	12.11	1905	1,179,144,550	14.24
1889	770,521,965	12.58	1906	1,320,501,572	15.69
1890	823,397,726	13.15	1907	1,423,169,820	16.29
1891	828,320,934	12.96	1908	1,116,374,087	12.54
1892	840,930,955	12.91	1909	1,475,520,724	16.28
1893	776,248,924	11.68	1910	1,562,904,151	16.94
1894	676,312,941	9.97	1911	1,532,359,160	16.32
1895	801,669,347	11.60	1912	1,818,073,055	19.04
1896	681,579,556	9.66	1913	1,792,596,480	18.47
1897	742,595,229	10.32	1914	1,789,276,001	18.00
1898	634,964,448	8.66	1915	1,778,596,695	17.60
1899	798,967,410	10.68	1916	2,391,635,335	23.28
1900	829,149,714	10.86	1917	2,952,467,955	28.30
1901	880,419,910	11.34	1918	3,031,212,710	28.62
1902	969,316,870	12.30	1919	3,904,364,932	26.49

In studying the above tables it is convenient to refer to only the "per capita" column which shows very clearly the great value of these figures in forecasting a panic. At the close of the Civil War the people were importing on a basis of about \$10 per capita and this steadily increased to over \$16 in 1872. This increase was far above what it should have been, and was therefore naturally followed by the panic, which came the following year, namely, 1873. As is the case with all panic years, the imports immediately dropped off from \$16 to about \$14 and steadily decreased for about five years.

Beginning with 1879 the imports again increased and property likewise increased until 1882, when they again reached \$14.36 per capita. Although this figure was not equal to the previous high figure for 1872, yet the rise was more rapid and it is not surprising that in the latter part of the following year there occurred another panic, namely, the panic of 1883-84. In 1885, or directly after this panic, imports again dropped to a minimum of \$10.49, but gradually increased along the normal line until they reached over \$13 per capita, at which point they remained constant during 1890, 1891 and 1892. As could readily have been predicted, these high figures were followed by another panic in 1893. During the next year, as is invariably the case, the imports again declined to \$9.97. Since that time they have increased at a more or less irregular rate, up to 1907, when they again reached \$16, at which figure they stood preceding the great panic of 1873. Then followed a

sharp reduction to \$12.87, coincident with the panic of 1907-08 and its curtailing of imported luxuries. With the year 1909 imports have again increased to the above figures, therefore showing that the same law has been observed in connection with all panics excepting that of 1903, which, as explained under "New Securities," was chiefly due to one specific cause as stated by Mr. Morgan, namely, "the congestion of undigested securities." Where the figures on 80% of our subjects clearly forecasted all panics excepting said panic of 1903, in only a few tables was the approach of this panic indicated. On the other hand, in these few tables, especially the table for "New Securities Listed" and "New Corporations," the increase was so tremendous, several hundred percent, that they of themselves were a sufficient danger signal, even though the figures on the other subjects appeared normal.

Thus in studying the figures on imports, we see that too great an increase in imports is a dangerous sign. This is due to two reasons: first, it necessitates the exportation of too much gold; and secondly, it signifies too great an extravagance on the part of the American people. As continued exports of gold are usually followed by advanced money rates, so too great an expenditure of money for luxuries and unproductive material, especially when imported, is followed first, by higher commodity prices, and then by a period of economy.

Not only are large figures for imports suggestive of a panic, but small figures, especially when they are increasing at a slow and conservative rate, are sug-

gestive of better times. This latter phase is especially well illustrated in an article which appeared some time ago in the New York *Evening Post*. It began by referring to a Wall Street man who rather facetiously remarked that good times were surely coming for he noticed that people were "wearing their old clothes." This remark, made carelessly, was nevertheless a statement of the tremendously important factor which personal thrift becomes during a period of depression.

In times of abounding prosperity it is easy for people to assume a contemptuous attitude toward petty economies. The talk is of making money, not of saving it. But a panic brings out the economic truth about the relation of savings to new business operations. "It must always be remembered," writes Lord Welby, commenting on an American panic in the *Contemporary Review*, "that the capital required to extend business and to open new fields of trade can only be supplied by the savings of the world. . . . But there is a limit to these accumulations, large as they are. If the passions of the world, the extravagance of the world, and above all the growing needs of the world trench too closely on the accumulations of the world, financial stringency will inevitably be the result." And it is a fact that even the most trivial form of saving becomes a large financial operation when generally practised.

How much can the American nation save should each man wear his clothes two years instead of one? The Census Report of Manufactures shows that the

factory product of men's clothing during a good year is valued at about \$375,000,000. One-third of this, or considerably less than one-third on the basis of retail prices, would more than equal the entire balance of trade in this country's favor in a normally favorable month. There are over \$40,000,000 worth of felt hats sold during a good year. By wearing their felt hats 50% longer than they have been accustomed to doing, plain Americans can effect a saving in a year greater than the great gold imports necessary to adjust conditions during a critical period.

Yet it is not always with clothes that people adopt a policy of retrenchment. If, for example, they cut down by only one-third the amount they spend on fresh beef, leaving all other items on the butcher's bill unaltered, the sum would be greater than twice the amount paid over the counters of the bank, which in October, 1907, endured the longest "run" in the history of banking institutions. Contract by the same proportion the consumption of all kinds of meat,—and many authorities think this would be well worth while from a hygienic point of view alone,—and a sum equal to the entire Government surplus at the time of the panic on Nov. 1, 1907, would be saved in less than ten months.

As to the commodities which are classed as real luxuries, the facts are equally striking. Enough cigars were "withdrawn for consumption" in 1907 to provide about eight and one-half cigars a week for every smoker, on the assumption that one-fifth of the total population, including babes in

arms, may fairly be put down in that class. Even for mere purposes of illustration, no one would be cruel enough to suggest treating the cigars as the colonists once treated the tea. But in a great emergency the average smoker might consider cutting down his allowance to one cigar a day. That trifling act would make a difference in the country's cigar bill of more than three and one-half millions a year.

Imports of luxuries into the United States during the fiscal year ended June 30, 1909, were valued at \$210,872,120, as compared with \$173,217,690 in 1908 and \$227,661,584 in 1907. This class of imports represented 16% of total imports in 1909, 14% of the total in 1908 and 15% in 1907. The increase of \$37,654,430 from 1908 was one indication of the return of prosperous business conditions. The 1909 value, however, is \$16,789,464 below the figures for 1907.

Outside of imports of silk, both manufactured and unmanufactured, having a value of \$110,622,169, imports of wines and spirits played no small part in the total imports of this country. Champagne imports, amounting to 436,628 dozen quarts, with a value of \$6,863,785, were the largest during the same fiscal year (1909) in the history of the country and showed a very perceptible increase over 1907. The increase over 1908 totalled 68,959 dozen quarts, or 18%.

Uncut diamond imports were valued at \$19,313,585; and, while the value was \$10,001,490 or over 100% greater than during 1908, it was still

\$4,651,853 below the total value for 1907. Total precious stone imports, having a value of \$29,373,-070 the past fiscal year, were over 70% greater than during 1908, but considerably below the total for 1907.

The above suggestions are sufficient to illustrate the reason for tabulating not only annual but also monthly figures on imports, namely, as a barometer of waste or of economy. It is, however, unnecessary that the monthly figures should be tabulated on a per capita basis, as the change in population is so slight.

Merchandise imports are also valuable indicators of the foreign exchange situation. For this purpose they are studied in connection with exports. A considerable balance of exports over imports is favorable to the exchange position of the country holding such balance; conversely, large excess of imports means an adverse rate of exchange against the country having such an excess—provided in either case that sufficient gold is not received, or sent, to balance the situation.

The following conclusions are suggested relative to "Imports."*

1. *During a Period of Business Depression.*

(a) A normal increase signifies nothing important, provided said increase does not adversely affect the balance of trade.

(b) A decrease signifies that fundamental conditions are improving.

(c) No change signifies nothing of importance provided the exports are likewise constant.

*These figures are valuable both as a barometer of the American demand for luxuries and for forecasting money conditions.

2. *During a Period of Improvement Following a Business Depression.*

- (a) An increase, if not too great, is natural.
- (b) A decrease signifies no immediate improvement.
- (c) No change signifies nothing of importance, provided the exports are likewise constant.

3. *During a Period of Prosperity.*

- (a) An increase, especially if abnormally large, is a sign that prosperity is nearing its end.
- (b) A decrease tends to lengthen the period of prosperity, and is therefore a sign of continued improvement.
- (c) No change signifies nothing definite.

4. *During a Period of Decline Following a Period of Prosperity.*

- (a) An increase calls for caution.
- (b) A decrease is only natural.
- (c) No change calls for caution.

EXPORTS OF MERCHANDISE FROM THE
UNITED STATES

By "exports" is meant the goods shipped from the United States to any foreign port or country. This includes all raw materials, manufactured articles, and in fact anything for which a resident of the United States receives money.

The monetary condition of the country depends on three things;

- 1st. The amount of money in the country.

2nd. The demand for money.

3rd. The velocity of circulation.

The first item, namely, the amount of money in the country, is very dependent upon the exports of the country. Technically, this is dependent upon the balance of trade, a term explained in the next section of this chapter, but practically it is dependent upon the exports.

Formerly the amount of exports was dependent almost entirely upon the amount of raw material produced; that is, wheat, corn, cotton, live stock, products, etc. The condition of the main crops of wheat, corn, and cotton, as well as that of the smaller crops, such as hay, apples, potatoes, etc. determined the exports. With small crops the exports were very small, while with large crops the exports were large.

This condition, however, has changed during the past twenty years, in which period there has been a very great increase in exports. The total exports of the United States have increased from \$800,000,000 to more than \$2,000,000,000 and this increase has been much larger in manufactures than in other products. In 1893 the United States was exporting about \$677,000,000 in food products and raw materials, which amount increased only to about \$946,000,000 for the fiscal year of 1913,—an increase of less than 40 percent. On the other hand, the exports of manufactured products increased from about \$177,000,000 in 1893 to more than \$1,500,000,000 in 1913,—an increase of more than 747 percent.

Such a change in the proportions between the agricultural and manufactured exports is important. If exports are to depend upon manufactured articles rather than on raw materials, bread-stuffs, etc., the decline in exports which heretofore has occurred during years of crop failures will tend to be eliminated. Andrew Carnegie once said that the time is coming when the greater part of the raw materials, now forming the bulk of the export figures of this country, will be used here, and their place in export trade will be taken by *manufactured* articles. If so, the American manufacturers must reach the markets of the world and compete therein with all the other industrial and commercial nations.

If this is so, and the figures for the past twenty-odd years seem to prove it, our exports probably will not only continue to increase, but the fluctuations will, as above suggested, be much less marked. This is another reason why we should carefully study the figures on the "balance of trade," rather than the figures on the "exports" or "imports" exclusively.

There is one point in connection with exports, however, that the merchant and investor should especially remember, namely, that in the ordinary course of events, exports continue to increase for some time after a period of depression begins, although the *proportion* of exports to imports *decreases*. This is due to the fact that the momentum of the energy which increased production and exports during the period of prosperity itself, does not immediately lose its force. Moreover, the increase

in exports usually continues until increased activity at home increases demand and prices, after which exports begin to diminish. Therefore, during a period of prosperity, a decrease in exports is a dangerous sign, as it tends to adversely affect the balance of trade. This is also true at the beginning of a period of depression; but after a period of depression has been existing for some time, then a decrease in exports is often a favorable sign, as it shows that home consumption is increasing. *These facts suggest the necessity of systematically tabulating the monthly figures on exports. Neither these figures, however, nor the figures on imports need to be plotted.*

Many merchants when studying foreign trade, instead of considering exports and imports separately, add them together and call their sum the *volume* of trade. This figure is valuable as a barometer of general business activity. It should not be confused with the balance of trade, which is the difference between exports and imports, and is watched by bankers for its effect upon the money rates and gold supply.

The following conclusions are suggested relative to "Exports" and also relative to "Volume of Foreign Trade."*

1. *During a Period of Business Depression.*

- (a) An increase signifies an improvement.
- (b) A decrease signifies no improvement.
- (c) No change calls for caution.

*These figures are valuable both as a barometer of foreign trade conditions and for forecasting money rates.

2. *During a Period of Improvement Following a Business Depression.*

(a) An increase signifies continued improvement.

(b) A decrease signifies no improvement.

(c) No change signifies nothing definite.

3. *During a Period of Prosperity.*

(a) An increase signifies continued improvement.

(b) A decrease signifies no further improvement or that a decline may be expected.

(c) No change calls for caution.

4. *During a Period of Decline Following a Period of Prosperity.*

(a) An increase signifies an improvement.

(b) A decrease signifies no improvement.

(c) No change calls for caution.

BALANCE AND VOLUME OF TRADE

One of the most important of the subjects that investors and merchants study when analyzing present conditions and forecasting future conditions is the *balance of trade*. When we have sold to foreign merchants raw materials or merchandise greater in value than that which they have sold to us, the balance of trade is said to be "in favor of" the United States as against foreign countries. This naturally results in the shipment to America of gold, to adjust the balance, or the selling in the United States of "exchange" at a discount, if the condition is but temporary. The balance of trade

does not always determine the debtor country, as there are other factors to be considered, but as a rule this is the case.

The "other factors" above referred to, are such factors as the sale of American securities abroad or the payment of interest by the United States and corporations therein to foreign security holders. Although from the bond dealer's point of view it is very advantageous to have a large and wide foreign market for American securities, thus leaving so much more "home" money free for investments, yet it must always be remembered that each year it may be necessary to ship gold from the United States to pay the interest on these securities and that eventually gold must be shipped to pay the securities themselves. Moreover, the amount of gold exported during the year that these securities are paid or when at any time before they are due the foreign dealers decide to sell them, will often nullify the good of a certain portion of the trade balance in our favor for that year.

If trade balances were dependent wholly on the exports and imports of raw material, merchandise, etc., it would be unnecessary for merchants and investors independently to tabulate monthly figures on gold movements in addition to tabulating monthly figures on exports and imports. Owing, however, to these additional factors, caused by the sale of securities, payment of interest, expenditures of tourists travelling abroad, etc., it is necessary to tabulate figures also on gold movements and these other factors.

Certain merchants when tabulating figures on

the balance of trade, which is the difference between the exports and imports, also tabulate figures showing the sum of the exports and imports or what is known as the "volume." This is wholly unnecessary when the imports and exports have been tabulated separately, but rather is of use simply as a short-cut to avoid the necessity of tabulating both imports and exports separately. *Figures, then, on imports, exports and the balance of trade, when tabulated each month serve as a wonderful barometer for discerning present conditions and for forecasting future conditions.*

Although the foreign trade statistics of other countries, when properly compiled for comparative purposes, are of interest to those studying the conditions of the United States, such figures are not conclusive in comparing the trade of two different countries. As there is no uniformity in the classification in the exports and imports of two different countries and as the methods of valuation are also entirely different, it is very dangerous to make comparisons between the various countries.*

The following conclusions are suggested relative to the "*Balance of Trade in favor of the United States:*"

1. *During a Period of Business Depression.*

- (a) An increase signifies an improvement.
- (b) A decrease signifies no improvement.
- (c) No change signifies that money rates may depend wholly on domestic conditions.

*This matter is discussed very clearly in an article on the "Comparability of Trade Statistics of Various Countries" by Sir A. E. Bateman, C. M. G., published by the American Statistical Association, New Series "1893" Vol. 3, page 533.

2. *During a Period of Improvement Following a Period of Depression.*

(a) An increase signifies continued improvement.

(b) A decrease signifies no improvement.

(c) No change signifies that money rates will depend wholly on domestic conditions.

3. *During a Period of Prosperity.*

(a) An increase signifies continued improvement.

(b) A decrease signifies that the end of the period of prosperity is approaching.

(c) No change signifies nothing of importance.

4. *During a Period of Decline Following a Period of Prosperity.*

(a) An increase signifies that lower money rates may be expected, and the end of the decline.

(b) A decrease signifies continued decline.

(c) No change signifies nothing of importance.

GOLD MOVEMENTS

The following by a well known writer is a good explanation of this subject:

"The natural movement of gold divides itself readily into four classes. There is in the first place the primary movement from the mines to the distribution centers, London for the European markets and New York and Seattle for the United States. After that comes what might be called the first distributive movement, where the gold arriving,

for instance, at London, is sold to the highest bidder, often representing far off countries. A readjustment movement follows where gold, for instance, purchased by Paris in London is sent on to Switzerland, Italy, or Belgium or any other points. Lastly there is a constant flow of gold from one part of the world to another, the movement of which is due to the ancient causes of supply and demand, of trade and other balances to be paid, and of bank reserves to be built up or released.

"Whatever schemes of international gold certificates or of an international clearing house may be proposed by financial economists for the purpose of reducing the gold movement, there can never be any question as to the necessity of the primary movement from the mines to the distributive centers. Roughly speaking, the world's gold production originates in three great sections, South Africa, Australia and the United States. From the former comes almost half of the gold mined in the world each year, and therefore bankers and merchants tabulate the monthly production of the Transvaal Mines.

"The great distance of these localities from any important financial market and the fact that most of the stock of the South African and Australian gold mines is held in England, makes London the point to which the product of those mines is naturally sent, so that nearly one-half of the world's annual production of gold comes into the London market for distribution.

"Arrivals of gold consigned to the London agents of the South African and Australian mines are fully

advertised, and what amounts to a regular auction is held every time a consignment arrives. The Bank of England is always ready (must be, by law), to purchase all gold of standard fineness offered to it, at 77 shillings 9 pence per troy ounce. But very rarely does the bank, or any one else, secure bullion at this price. Usually the bidding of the representatives of the various banks puts the price well above that figure.

"London is the one free gold bullion market of the world. As the metal arrives from the mines it is sold to the highest bidder without fear or favor. But this process must not be confused with the gold market maintained by the Bank of England. Usually the Bank will sell gold bars at a price, but sometimes it will not, and then the cry goes up that London is no longer a free gold market. As a matter of fact, the Bank of England is far from being a free gold market, but the open market is free and as long as there is any gold coming in, the highest bidder gets it.

"In the United States on account of our entirely different currency law, there is no bullion market at all, free or otherwise, and the primary movement is direct from the mines to the assay offices, where a fixed and unvarying price is paid for it. In other words, all the gold produced in this country immediately passes into its circulation. There is no long trip to an open market, and then an apportionment to all parts of the world. The owner of the gold takes it to the nearest government assay office, where it is assayed and bought from him at

so much per ounce. Afterwards if any one needs gold bullion, for export or other purposes, he can obtain it at the treasury at a fixed price, as long as the supply holds out.

"The very fact that there is a primary movement of gold from the Australian and South African mines to London makes necessary the distributive move to the various markets, whose representatives at the British capital have been successful in their bidding for this new supply. But even after that comes another movement, for the smaller markets are not directly represented in London, but must obtain the supplies of gold they need through their important correspondents.

"These three movements carry the gold from the place where it is mined to the lesser banking centers, where its distribution is complete. But the movement of the metal by no means comes to an end with its distribution. There follows a fourth movement, dependent entirely upon financial conditions, the movement which will often result in the practical transfer of all or part of some firmly established gold supply to some distant market."

There are three distinct influences, which bring about such movements. The *first* is the necessity of making international payments for merchandise or securities at times when exchange is scarce; the *second* has to do with the maintenance or restoration of bank reserves, which can at times be accomplished only by the outright purchase of gold in other countries; the *third* is due to inter-

national operations where bankers are anxious to transfer large balances from one point to another, and not finding exchange available in quantity, send gold instead.

From the very nature of these causes, it will readily appear that it is a mistake to imagine that the development of our international financial relations will eventually make it unnecessary to ship gold at all. Only one of them, the first, could possibly be affected by the arrangement of a system of international credits. These large payments by one country to another, such, for instance, as the payment for the Panama Canal or the payment to us of the San Francisco fire indemnity, continually have to be made, and often under circumstances and at times when it is impossible that there should be a sufficient amount of exchange available. It is hard to see how, even if an international system of crediting and debiting should be arranged, payments of this kind could eventually be settled by remittances of gold or exchange, and as for gold shipments arranged for the building up or maintenance of bank reserves, it will appear that, as the bankers of different countries become more closely allied, the interchange of gold is greatly facilitated. Through various causes the gold reserve of the banks, particularly the great national banks of Europe, becomes depleted at times, and then these institutions are apt to call upon their foreign connections to send them the gold they need.

The other reason which makes gold, often ap-

parently a settled reserve, move from one country to another is that in the highly developed state of the foreign exchange business, balances are continually being transferred to the points where they can be most advantageously used. As long as exchange on the point to which the transfer is to be made can be bought, that will be the form of remittance. When, however, exchange cannot be had, gold will be sent, and so it appears that the more balances transferred, the greater is apt to be the circulation of gold.

The importing of gold does not necessarily mean "good times" nor even "lower money rates," nor the exporting, the approach of a crisis; nevertheless important deductions may be made if monthly figures are systematically collected and tabulated thereon. These deductions have been summarized by Burton as follows:

"Every country will, under normal conditions, have a certain share of the gold or primary supply of the world. The different countries have been compared to reservoirs of water, of various sizes, connected by pipes. All the reservoirs will maintain the same level. The share of each country is determined primarily by its wealth. There is a tendency for metallic money, which is a form of wealth, to maintain in every country a fixed proportion to other forms of wealth. But the share of each is affected by the volume of its trade and other incidental circumstances, among which are established methods of transacting business, the habits of its people, and, notably, its currency system. The currency system affects the gold supply.

Paper money displaces gold, and causes it to be sent elsewhere in a less or greater proportion, according as it is absolutely based upon a deposit of gold, is redeemable in gold on presentation, or is not redeemable at all.

"Methods of transacting business influence the supply. Where balances are largely settled at clearing houses, and checks generally employed, less currency and less gold are required. In this particular, the contrast between England and France is very marked. The latter country makes less use of clearing houses and checks and accordingly requires a large supply of gold and silver, the latter metal being extensively used.

"The habits of the people exercise an important influence. After the Franco-Prussian War it was found that the French peasant proprietors had hoarded large sums of gold. In the great emergency created, these amounts were brought out and assisted in the payment of the indemnity. Frequently when native grandees in India die, it appears that they have been accumulating a great stock of gold, much of it in the form of ornaments, which for years has been kept out of circulation. All this hoarding tends to increase the demand on the gold which is in circulation as money. The peasant, or grandee who hoards, causes so much of the world's capital to lie idle. The benefit accruing in time of crisis or emergency to countries in which quantities of gold are withheld from general circulation is obtained at the cost of diminished activity and volume of business under ordinary conditions.

"M. Paul Leroy-Beaulieu quotes figures to show that France in 1885 had a circulation of metallic money amounting to 215 francs per capita; England and the United States had, respectively, 86 and 68 francs per capita. Of course if the quantity of coin in circulation had been based upon per capita wealth at the time, England would have shown the largest quantity per capita, France next and the United States last.

"There is then a normal share of gold which belongs to each country. If any country has more than its share, it will export. It is easy to recognize that from a gold producing country, such as Australia, South Africa or Alaska, the greater part of the gold mined will be exported. Likewise, if gold is held in any one country in such quantity that it can be invested elsewhere more advantageously, either in loans or in purchases, or can be sent abroad in payment of debts, it will be exported. If it is invested in loans abroad, it is an indication of surplus capital and makes a favorable showing. If invested in purchases at low prices, it shows ability to draw upon other countries for an increasing share of objects of utility. If the purchases show that home prices are higher than foreign, and a supply of things usually obtained at home must be obtained abroad, the export of gold is a sign of danger. Thus an important question in determining the shipments of gold, is the nature of the purchases or investments to be made with it.

"The specie exports and imports of this country

have furnished distinct indications prior to each period of disturbance, but their significance cannot be understood without an examination not only of our general situation, but also of the particular situation at different times. Of the various circumstances under which excess of exports of gold indicate the approach of a crisis, may be mentioned the following:

"First, when gold is required for purchases abroad which are made at high and rising prices. This indicates overaction and concurs with unusual increase in the prices of domestic supplies. Especially is this true if, in a time of rising prices, gold is exported for commodities usually supplied by domestic production. Such a condition cannot long continue without a reaction and an ensuing depression. The indications which are significant in connection with the imports of merchandise apply to the exports of gold. On the other hand, the export of gold for purchases, when prices are low, is not an unfavorable condition. It indicates purchases upon advantageous terms.

"Second, when the export of gold is attended by a scarcity of money and a marked increase in the rate of discount, it is a decidedly unfavorable indication. This is of the same kind as those indications noticed in the conditions of banks. A steady increase in the rate of discount, or a decrease in the supply of gold, is a sure precursor of a crisis. The only question is how long this condition can continue without a crash.

"Third, an unusual balance of exports of gold,

not explained by surplus production, continued for a considerable time, or a sudden withdrawal of large amounts is one of the most unfavorable conditions. It is to be noted that there is an exceptional sensitiveness in financial centres on the subject of gold exports, and sometimes an entirely normal export is interpreted as meaning instability, and destroys confidence when there is no need for distrust."

It should be added that, when for a succession of years gold is withdrawn from circulation by reason of the substitution of inconvertible paper as money, the conditions which exist are sure to vary from normal lines. Credit will rest upon a false basis and the inevitable tendency will be towards an increase in the quantity of paper money outstanding and a dangerous expansion of credit.

In many respects the phenomena of a balance of gold exports are similar to those arising from a balance of merchandise imports. The two are expected to appear contemporaneously, but in essential particulars they are different. Some differences depend upon the question of gold production. In countries like South Africa and a portion of Australia, where gold mining is the leading industry, gold exports are naturally classed with merchandise exports, and an export is a favorable indication. In non-producing countries like England and France, where gold is in demand principally as money, imports are a favorable indication. There is another difference in a noticeable tendency towards contemporaneous decline in gold reserves in all the great financial centres. That which is lost

in one country is not gained in another. This decline is explained by the withdrawal of considerable amounts to be hoarded or retained in circulation outside of the banks; and, to some extent, to the transfer of gold to the countries outside of the most advanced industrial and commercial circle. The influences which cause gold to be hoarded or retained in circulation outside of the banks are not unlike those which affect the circulation of paper money. International credits or payments frequently cause an excess of gold imports in a country to coincide with an excess of imports of merchandise. Again, a large demand for money, manifesting itself in high rates of interest, may cause gold to be retained in a country contemporaneously with an unusual balance of imports.

For these reasons bankers and merchants systematically collect and tabulate monthly figures on "Gold Movements." This, moreover, has recently been done more than ever before and panics are now actually "staved off" for a year or more by the artificial importing of gold by the banks of the affected country. "For banks to import gold it is necessary to create a credit on the books of a bank, upon which the gold importer may draw, through the Clearing House, in payment of the cable transfers and bills of exchange necessary to cover the amount of gold to be brought over. Clearing House Loan Certificates enable the banks to make these credits, and that is the reason we were able to import such a large volume of gold during 1906-7. The banks extended their facilities to the importers,

who brought over the gold on 'Trust Receipts,' which were deposited with the banks as collateral security pending the arrival of the gold."

These issues of Clearing House Loan Certificates also provided credit with which the banks were enabled to buy and pay for large amounts of the Panama bonds and United States Certificates of indebtedness, which were issued by the Government as a measure of relief. The bonds and certificates so purchased were then placed on deposit in Washington as security for the new national bank note circulation.

The following conclusions are suggested relative to "Gold Movements":

As large or long continued gold exports* are always unfavorable signs and gold imports are always favorable signs, the following suggestions refer especially to exports:

1. *During a Period of Business Depression.*

(a) An increase in gold exports forecasts an increase in money rates and suggests caution.

(b) A decrease forecasts lower money rates and no improvement.

(c) No change is unfavorable or favorable according to whether gold is being exported or imported.

2. *During a Period of Improvement Following a Period of Depression.*

(a) An increase forecasts an increase in money rates but usually retards the improvement.

*It is an interesting fact that while the United States is the only one of the great nations which produces much gold, yet we draw more heavily on the international supply than any other country except France and Germany; and our imports of gold usually result automatically from our large export balance of merchandise.

(b) A decrease signifies continued improvement and forecasts lower money rates.

(c) No change is unfavorable or favorable, according to whether gold is being exported or imported.

3. *During a Period of Prosperity.*

(a) An increase signifies no improvement and, if continued over a long period, foretells the end of the period of prosperity.

(b) A decrease signifies continued improvement, but *any* exportation of gold should be considered as unfavorable.

(c) No change calls for caution.

4. *During a Period of Decline Following a Period of Prosperity.*

(a) An increase signifies no improvement and often calls for caution.

(b) A decrease is the normal result of a decrease in activity.

(c) No change is unfavorable or favorable according to whether gold is being exported or imported.

FOREIGN MONEY RATES AND FOREIGN
EXCHANGE

These two subjects are usually discussed together, first because they are co-related and secondly, because the subject of foreign money rates of itself is not sufficiently important to be

treated independently. All that need be said as regards foreign money rates is that money, like water, seeks its own level, unless artificially held or forced. Therefore, if money rates are low in the United States, but for some time have been high in England, Germany or France, money rates in the United States are sure to increase soon, the increase to be followed possibly by a period of stringency. There are two reasons for this: first, the loans to American bankers by foreign bankers will be called for payment, or else the foreign rate will so be raised that it will be more profitable for the Americans to borrow at home; and secondly, foreign bankers will begin to borrow from America and thus take advantage of the lower American rates. As both of these causes are in operation at the same time, the rates very soon equalize, the foreign rates declining and the American rates increasing. The converse of this principle is also true. When the money rates in America are high, but the foreign rates have been low for some months, the tendency is for the American rates to decline and the foreign rates to advance.

When tabulating foreign rates, investors and merchants consider only the "rate of discount" of the three leading foreign banks: namely, the Bank of England, the Bank of France and the Bank of Germany. The tabulation and the interpretation of these rates is very simple, especially as the three rates are usually added and averaged, thus necessitating the use of only one table. The American merchant always keeps in mind, however, that low foreign money rates have their disadvantages as well as their advantages, as

very often they signify a low condition of foreign trade which, during certain periods, may be spread to America.

The changes in the Bank of England rate in recent years have been as follows:

June 6, 1901:3½	Sept. 28, 1905:4	Nov. 7, 1907:7	Jan. 6, 1910:4
June 13, 1901:3	Apr. 5, 1905:3½	Jan. 2, 1908:6	Jan. 20, 1910:3½
Jan. 23, 1902:3½	May 3, 1906:4	Jan. 16, 1908:5	Feb. 10, 1910:3
Feb. 3, 1902:3	June 21, 1906:3½	Jan. 23, 1908:4	Mar. 17, 1910:4
Oct. 2, 1902:4	Sept. 13, 1906:4	Mar. 5, 1908:3½	June 2, 1910:3½
Oct. 31, 1902:4	Oct. 11, 1906:5	Mar. 19, 1908:3	June 9, 1910:3
May 24, 1903:3½	Oct. 19, 1906:6	May 28, 1908:2½	Sept. 29, 1910:4
June 18, 1903:3	Jan. 17, 1907:5	Jan. 14, 1909:3	Oct. 20, 1910:5
Sept. 3, 1903:4	Apr. 11, 1907:4½	Apr. 1, 1909:2½	Dec. 1, 1910:4½
Apr. 14, 1904:3½	Apr. 25, 1907:4	Oct. 7, 1909:3	Jan. 26, 1911:4
Apr. 21, 1904:3	Aug. 15, 1907:4½	Oct. 14, 1909:4	Feb. 16, 1911:3½
Mar. 9, 1905:2½	Oct. 31, 1907:5½	Oct. 21, 1909:5	Mar. 9, 1911:3
Sept. 7, 1905:3	Nov. 4, 1907:6	Dec. 9, 1909:4½	Sept. 21, 1911:4

Feb. 8, 1912:3½	Jan. 7, 1914:4½	Aug. 6, 1914:6	No change in 1918
May 9, 1912:3	Jan. 22, 1914:4	Aug. 8, 1914:5	Nov. 5, 1919:6
Aug. 29, 1912:4	Jan. 29, 1914:3	No change in 1915	Apr. 15, 1920:7
Oct. 17, 1912:5	July 30, 1914:4	July 3, 1916:6	
Apr. 17, 1913:4½	July 31, 1914:8	Jan. 17, 1917:5½	
Oct. 2, 1913:5	Aug. 1, 1914:10	Apr. 5, 1917:5	

Foreign money rates, as affecting American money rates through the transferring of gold, are affected only by the purchase and sale of foreign exchange. Therefore, although merchants usually study only foreign money rates with their common knowledge of foreign exchange, yet theoretically, a study of foreign exchange will in itself suffice.

Foreign exchange is quoted both as to "actual rates" and as to "^{current} quoted rates." For a general description of these headings, we quote Howard Irving Smith as follows:

"The quotation 'actual rate' means the rate at which exchange is sold in large amounts by the dealer; the quotation 'posted rate' means the preliminary asking rate of the day before an actual rate is made, and this is the rate usually exacted for a small amount of exchange by a dealer. The actual and posted rates are the rates at which dealers sell bills of exchange issued by themselves. They do not, as a rule, announce the rates at which they will buy commercial bills of exchange; that is a matter of negotiation and depends on the nature of the bills. The newspapers, however, publish approximate prices for commercial bills.

"Foreign exchange is payable in the money of the country upon which the exchange is drawn, that is, where the exchange is payable. The equivalent of \$1.00 in English money is 49.3 pence or four shillings 1.3 pence. When foreign exchange is quoted in the money of the country where it is bought, the unit of the money of the country where payable is figured at so much money of the country where the

bill is issued. Thus, when sterling exchange is quoted at \$4.8665, £1 in exchange is worth \$4.8665.

"When foreign exchange is quoted in money of the country where it is payable (not where it is bought), the unit of money of the country where it is bought is figured at so much in the money of the country where the bill is payable. Thus, when exchange on France is quoted at 5.18 (5 francs, 18 centimes), \$1.00 in exchange is worth 5.18 francs.

"When a bill of exchange is quoted in the money of the country in which it is issued, but is payable (is to be paid) in the money of the country upon which it is drawn (where it is payable), the higher the quotation, or rate, the higher is the cost of such exchange, for the reason that a high rate requires more of the money of the country where the bill is purchased, to buy a given amount of the money of the country where the bill is payable than a low rate requires.

"On the other hand, when a bill of exchange is quoted in the money of the country upon which it is drawn (which is also the money in which it is to be paid), as francs, the higher the quotation the less the cost of such exchange, for the reason that more (in the foreign country's money) can be purchased for \$1.00 at a high rate than can be purchased at a low rate.

"Illustration: If exchange for £1 is purchased for \$4.89 it costs more than if purchased at \$4.84. On the other hand, if exchange for 525 centimes (5 francs, 25 centimes) is purchased for \$1.00 it costs less than if \$1.00 is paid for 511 centimes; or, putting

it the other way, \$1.00 buys more in francs at the high rate than it does at the low rate.

- "The amount paid for a time bill depends on the length of time it is to run and the rate of interest prevailing in the country where the bill is payable. A commercial bill payable in London three months after date is bought by a dealer in exchange in New York at a price which is equal to a bill payable on demand, less the three months' interest at the existing rate of interest in London. The London rate of interest serves as the basis in calculating the price of the bill, for the reason that the bill is payable in London and to make it equal to a draft payable on demand it must be discounted in London.

"High cost for exchange ordinarily means that the international balance is against the country where the high cost prevails; conversely, low cost for exchange ordinarily means that the international balance is in favor of the country where the low cost prevails." *However, as all of this may be ascertained by a study of foreign money rates and other tables already mentioned, it is unnecessary for the merchant to collect or tabulate figures on foreign exchange.*

The fact is that, so far from financial panics being confined to the United States in 1907, a really formidable credit crisis occurred that year in at least four foreign cities situated in four separate continents, two of these markets being wholly unconnected in a financial way with the United States and the financial collapse occurring in two of them before the panic broke out in our country in October, 1907. As early as May, 1907, bank failures.

hoarding of money and very general suspension of credit facilities were witnessed in Egypt, and London was hurrying along emergency shipments of gold to Alexandria, exactly as it hurried along the gold shipments to New York about six months later. At nearly the same time, bank failures and panicky conditions on the markets were happening in Japan. In almost every week of our own October crisis, and on yet another continent, the powerful Banco Mobiliario of Valparaiso suspended payments, credit came to a halt in Chile, the currency sank to a low level of depreciation, and the Chilean Government was forced to take measures of relief. Again almost simultaneously with our own crisis, panic broke out in Hamburg, Germany, carrying down two great commercial houses. Leading German financial experts pronounced the crisis the worst Hamburg had witnessed since 1857.

One hardly needs add to this list such other minor crises as the temporary breakdown in credit in Genoa in the middle of 1907, and the panic at Copenhagen, a few months after our own, which compelled the Danish Government to come to the rescue by guaranteeing the assets of banks then subject to a run by depositors. What this part of the history of 1907 conclusively proves is that financiers and historians must look elsewhere than to American legislation and American banking for causes of that year's panic. European economic experts have not found it difficult to assign the cause; it was indeed pointed out by the eminent Paris economist, M. Leroy-Beaulieu, even before the panic came.

"That cause was the exhaustion, in a violent world-wide industrial expansion and an even more world-wide speculation, of the world's accruing capital resources, and a consequent strain on credit which, throughout the financial world, approached the breaking point. With such a tension in the international chain of credit, the break was bound to come, either where the link was weakest or where the strain was greatest. The link was weakest in Chile and Egypt while the strain was incalculably the greatest in the United States, where speculation of an unheard-of rashness and magnitude had been raging for two years. The severity of the shock in all these localities, and the world-wide liquidation and reaction, in both finance and commerce which followed and which long prevailed, in Europe, Asia, Africa and South America, as well as in this country, were the logical and inevitable outcome." Therefore the necessity of studying foreign conditions and not simply conditions in only one country, is apparent. Considering the recent great European War the necessity for such study is even more potent.

The following conclusions are suggested relative to "Foreign Money Rates,"* as expressed in figures of foreign conditions:

1. *During a Period of Business Depression.*

- (a) An increase in foreign money rates usually signifies higher domestic rates.
- (b) A decrease signifies no improvement.
- (c) No change signifies "no change."

*These figures are also of special value in judging the course of domestic rates.

2. *During a Period of Improvement Following a Period of Depression.*

(a) An increase in foreign money rates or in foreign exchange usually forecasts higher domestic money rates, and may retard further improvement.

(b) A decrease is favorable.

(c) No change signifies normal conditions.

3. *During a Period of Prosperity.*

(a) An increase in foreign money rates or in foreign exchange usually forecasts higher domestic rates, and signifies prosperity is nearing its end.

(b) A decrease signifies continued improvement.

(c) No change means normal conditions.

4. *During a Period of Decline Following a Period of Prosperity.*

(a) An increase in foreign money rates or in foreign exchange usually forecasts higher domestic money rates, and further trouble.

(b) A decrease signifies the reverse, providing all other factors remain constant.

(c) No change signifies normal conditions.

PRODUCTION OF GOLD

As to the effect of the production of gold, there is a diversity of opinion. That it is a subject of great importance when a long period of years is considered is admitted by all; but many deny that it is of such importance when considering a period of only a few years. The theory that as the supply of

gold (which is used as a standard of value and a medium of exchange) *increases*, interest rates and commodity prices must *immediately* increase, is actively combated by many authorities. If there were no other possible causes at work affecting interest rates and commodity prices, this theory would be taken more seriously, especially as it would involve a general decline in bonds and all *fixed interest* obligations; but even then it would be obliged to stand the test of experience.

The former editor of the *Engineering and Mining Journal*, Mr. Walter R. Ingalls, claims to have shown by statistics and graphic diagrams, that there has been no correspondence between the fluctuations in the gold supply and those in prices. Going back to the time of the first notable modern increase in gold production, he showed that for some years, beginning with 1851, there was an apparent parallelism, but there was a drop in prices after the crisis of 1857, and then a recovery and increase until 1864, though the production of gold was then falling off. After that prices declined until 1870, while the gold supply fluctuated within narrow limits; but in 1871 prices started up again, with gold production declining. During the fall in prices after 1873, there was an upward turn in the production of gold and by a peculiar perversity, in view of any theory of cause and effect, it fell off again after 1879 as prices began to rise. The decline in gold production continued until 1883 when there was another upward turn followed by a continued increase until 1896. The output was then more than double that of 1884

and the highest ever reached before that time; but during that period there was an almost continual decline in commodity prices, to contrast with the rise which took place, while the annual supply of new gold again doubled. This may not prove that the increased production of gold has had no effect upon its commercial value compared with the general mass of commodities, and consequently upon prices determined by its value as the standard of measurement and computation, but it does very conclusively refute the theory that the two things stand in the *closest* relation of cause and effect. There is certainly no close correspondence between them from year to year and the inevitable inference is that much more potent causes than the volume of gold in monetary use are at work in determining the course of prices.

It is a question whether the demand for the use of gold as a basis of credit and exchange has not kept pace with the supply and prevented any absolute depreciation. Mr. Ingalls forcibly opposes the argument that the cost to capital and labor of producing gold has diminished and that available deposits are on the increase, with cheapening methods of extraction. In connection with the question of increased demand, he took the increasing production of pig-iron as fairly representing the advance made in industries and trade generally and showed both by figures and graphic diagrams that its increases has been relatively greater than that of gold.

The general subject of gold has best been presented in a book entitled "The Story of Gold" by

Professor E. S. Meade; while the theory that the rise in commodity prices is due to the increased production of the metal is well described in the book entitled "Gold Supply and Prosperity," edited by Byron W. Holt of New York City, who is generally recognized as one of the best informed men on this subject. Professor Irving Fisher has also given a great deal of study to this subject, and his book, "The Purchasing Power of Money," and his other able studies on the decrease in the purchasing power of the gold dollar, etc., should be read by all who wish to be well informed concerning this important matter. Another book on this subject is "How to Invest When Prices are Rising," published by G. Lynn Sumner & Co., Scranton, Pa. Based upon the assumption that the output of gold is to increase for the next ten years at an average rate of not less than 5%, Mr. Holt arrives at the following fourteen conclusions:—

"(1). That the value of gold will depreciate as the quantity increases, though not, perhaps, at the same ratio.

(2). That this depreciation will be measured by the rise in the average price level.

(3). That rising prices will soon lead again to rising and higher interest rates.

(4). That, because of high interest rates, the prices of bonds and most other long-time obligations drawing *fixed* rates of interest, dividends or income will again decline to low levels.

(5). That, because of rising prices and high interest rates, the cost of materials and supplies will

tend to decrease the net profits of all concerns the prices of whose products or services either cannot be advanced at all or are not free to advance rapidly.

(6). That, because of rising prices, the net profits of all concerns that own their own sources of materials and supplies will tend to increase.

(7). That, because of rising prices of commodities, the market prices of all tangible property will tend to rise. This includes lands, mines, forests, buildings and improvements.

(8). That, because of rising prices of commodities and property, the prices of the stocks of corporations holding commodities or property will tend to advance.

(9). That, because of rising prices and therefore of cost of living, wages must and will, tend to advance.

(10). That, because wages and salaries will not rise as much or as fast as will prices and the cost of living, there will be dissatisfaction and unrest among wage and salary earners.

(11). That, because of rising prices and property, there will be much speculation in commodities, stocks and real estate.

(12). That, because of the great profits that will result from speculation, honest industry will be discouraged and recklessness and extravagance will be encouraged.

(13). That, because rising prices will decrease the purchasing power of debts, and thus aid debtors at the expense of creditors, they will discourage saving and thrift.

(14). That, then, an increasing output of gold means rising prices, rising wages, high interest rates, the scaling of debts, speculation, unjust distribution of earnings and wealth and general dissatisfaction and discontent."

These conclusions seem to follow each other logically, though their close connection is not wholly evident. The first two conclusions, being the more fundamental and important, Mr. Holt discusses as follows:

"It is almost inconceivable that an increasing supply and output of gold, the standard and measure of values, will not tend to raise prices. It is not asserted that a slight increase in the supply will cause prices to advance. The natural course of prices, especially of manufactured goods, is downwards. To offset this cheapening tendency, due to invention and improvement, an increase of perhaps 2% a year in the supply of gold may be necessary. To offset the growing demand for gold, due to industrial expansion, an increase of perhaps 1% more a year may be necessary.

"An increase of perhaps 3% a year in the world's volume of gold, then, may be necessary to maintain stable prices. This being true, a smaller increase than 3% will result in declining prices, and a greater increase will result in advancing prices of commodities. An increase of 5% a year in the supply of gold then would cause prices to rise an average of 2% a year, and an increase of 8% in the supply of gold would cause prices to rise an average of 5% a year."

As to whether Mr. Holt or Mr. Ingalls is correct, the reader must decide for himself. It is very generally admitted that a sudden increase in the supply of gold at certain times gives impetus to business activity, results in the conception of new ventures and indirectly is accompanied by an advance in prices. This rising movement in prices of itself encourages speculation and the extension of credit to a dangerous degree. Large profits lead to waste and extravagance, which conditions are followed by a crisis and a period of depression. Therefore, it seems reasonable to admit that the overproduction of gold is one factor causing increased prices, thus indirectly affecting business conditions; but it is very illogical to point to the production of gold as *the only factor* affecting prices and interest rates. In fact, an increase in credits of any form (that is, bank deposits subject to check), and especially an increase in the velocity of circulation of said moneys and credits, are also important factors. The increase in population, the destruction of natural resources, industrial combination, labor unions, increased cost of agricultural lands and many other factors tend to increase the prices of commodities, rates of interest and investment values.

Nevertheless, *"Gold Production"* is an important subject, and it is the practice of most careful bankers, manufacturers and merchants regularly to tabulate the monthly production of the Transvaal mines as an index of the world's production. Of this production it is said: "Treatment of ore in Johannesburg continues seven days a week, and February, with 28

days, is always a small month; while, other things being equal, a month with 31 days will have a bigger output than a month with 30 days. December is subject to special conditions, because there is a general clean-up at the end of the year, which always makes that month larger than others.

From the time of the Boer War up to 1913, the Transvaal output increased steadily. In 1913, however, the production declined, due largely to labor troubles and also to added difficulty in mining at great depths. If this decline continues for a number of years it will prove an important factor, unless new deposits are discovered to make up the deficiency.

While a continued reduction in the world's gold production may not be felt for years, it may mean ultimately a reduction in price of all commodities not artificially supported; an advance in price of bonds; a reduction in rate of interest on mortgages; lower wages in view of the consequent greater purchasing power of gold; and a decline in price of stocks caused by the transference of investments from stocks to bonds. This last development might occur because of the great purchasing power of interest on bonds, the collapse of any inflation movement in stocks, and the investor's preference for a safe investment. The following conclusions are suggested relative to "Gold Production":

1. *During a Period of Business Depression.*

- (a) A great increase tends at first to lower money rates, and to cause an improvement.

(b) A great decrease tends to increase money rates, and may signify no immediate improvement.

(c) No change signifies that money rates will be determined wholly by outside conditions.

2. *During a Period of Improvement Following a Period of Depression.*

(a) A great increase tends at first to lower money rates (although the later effect may be the reverse) and signifies continued improvement.

(b) A great decrease tends to increase money rates, and signifies no improvement.

(c) No change signifies that money rates will be determined wholly by outside conditions.

3. *During a Period of Prosperity.*

(a) A great increase is very dangerous and calls for caution.

(b) A great decrease tends to upset conditions and also calls for caution.

(c) No change signifies that money rates will be determined wholly by outside conditions.

4. *During a Period of Decline Following a Period of Prosperity.*

(a) A great increase tends to retard the re-adjustment.

(b) A great decrease tends to hasten the re-adjustment.

(c) No change signifies that money rates will be determined wholly by outside conditions.

COMMODITY PRICES

One cannot do better, when studying this subject, than to refer to Hon. Theodore E. Burton's book entitled "Crises and Depressions," in which, among other things, he states:—

"In the season of activity, which precedes a crisis, prices rise. This rise begins after the worst of the previous depression has been reached. Attention has already been called to the fact that the rise in prices is unequal in different commodities. Iron and steel in their various forms, as well as other commodities required for construction, and those which supply new demands of consumption, show the most striking increases. During a depression, prices of these commodities fall first and most notably. The prices of other commodities do not fall so much or so early. In the preceding season of expansion they do not rise so much, and, in their rise as well as in their fall, they show, for the most part, only a remote effect of the activity or inactivity of the time.

"As is well known, it is the tendency of prices of iron and steel to reach and pass their maximum some time before the crisis occurs, though if the crisis be precipitated by an unexpected failure, the interval will be short or the high prices may continue until the very outbreak of the crisis.*

"In the United States, prior to the crisis of September 18, 1873, a low price level appeared in

*This is why the price of iron is tabulated each month—as a barometer for forecasting changes in general business; although—as will be seen from a chart in the earlier part of this book—commodity prices do not reach a minimum until one or two years after the stock market reaches its low point.

almost all grades of iron and steel in January, 1871. This was followed by a rapid and almost unbroken rise, culminating in the months of October and November, 1872. A maximum price of rolled bar iron, \$118.72 at Philadelphia, was reached in October, 1872. The price fell, with slight fluctuations, to \$80.64 in September, 1873, the month of the crisis.

"In the depression which followed the crisis of 1873, prices of a majority of the varieties of iron and steel fell to a minimum in the latter part of the year 1878, though steel rails and standard sections of iron rails fell to a minimum in the closing months of 1877. The month of November, 1878, may, however, be selected as the turning point. At that date No. 1 anthracite foundry pig iron had fallen to \$16.50 per gross ton, less than one-third the price of September, 1872.

"In the expansion which followed 1878, prices reached their maximum in the months of January, February and March, 1880; but the highest figures were maintained only for a very short time. Anthracite foundry pig iron, which had fallen to \$16.50 in November, 1878, rose to \$41.00 in February, 1880; rolled bar iron to \$85.12 in the same month; steel rails to \$85; cut nails to \$5.25 in the months of February and March. After the month of March, 1880, there was a sharp decline, though interrupted by numerous fluctuations. A steady decline began after the closing months of the year 1882, and continued until another minimum was reached in the summer of 1885. The crisis of May, 1884, occurred in the midst of this downward

movement and seems to have exerted but little influence upon the iron market. Anthracite foundry pig iron fell to \$17.75 in the months of June, July and August of 1885 and then began to rise. Rolled bar iron fell to \$40.30 in May of the same year, and then was quoted at \$40.32 for the remaining months of the year. Steel rails fell to \$26 in the month of April.

"After the minimum point in 1885, there was an upward movement continuing until the earlier months of 1887, the months of February and March of that year showing maximum prices in most varieties of iron and steel; this maximum was succeeded by a fall in the prices, which for most varieties reached a minimum in May and June, 1889. This minimum was followed for a short time by rising prices, which reached a maximum in 1890. In the two decades after the maximum prices of 1880, the trend of prices differed from that in the preceding decade. Fluctuations were much more frequent and for nearly eighteen years the general tendency was downward, though interrupted by brief revivals in prices in the years 1882, 1886, 1887, 1890 and 1895. The rise in price which occurred in 1887 and other years proved to be greater than the increased demand would sustain. The general statement may be made that during this long period between 1880 and 1897, in fact until 1898, for there was only a slight rise in that year and the average price of several forms was less than in 1897, the demand did not keep pace with the increasing supply, and improvements in production were constantly exert-

ing their influence. The increase in price in the United States in 1887 was greater than in other countries. The reason for the difference may be found in the exceptional demands in the year 1887, in which year occurred the most extensive railway building and the greatest consumption of steel rails. There was an exceptional deficiency in the home supply. There was also a revival of general activity in this country, the effect of which was conspicuous. It should be further noted that the crisis of this decade was much less severe than that of 1873, and the downward movement succeeding it, though long continued, manifested less decline in prices.

"After the high prices of 1890, there was a fall which continued until the month of July, 1897. This fall was more uniform than those after 1880 and 1887. It was interrupted only by a temporary revival beginning after April, 1895, and continuing until the latter part of the year." Beginning in July, 1897, prices show an upward tendency, but increases were slight until the beginning of 1899; then there was a very rapid rise until the latter part of the year, which continued, with the exception of a very slight setback in 1903, to the depression of 1907-8.

Again the improved conditions of 1909-10 were *preceded* by a remarkable increase in the price and production of iron, followed later by an increase in the production of copper and other commodities. From the high point of 1909-10, prices of iron and steel declined again to a low point in December, 1911, followed by a rapid advance in 1912.

In the examination of these price movements several marked tendencies appear:

"(1). The interval between the date of the maximum prices and the succeeding crisis is longer in the later years. This interval continued for a few months prior to the crises of 1825 and 1837, nearly a year prior to that of 1873, and several years prior to the crises of 1884 and 1893. This longer interval may be explained by the greater ability to carry accumulated stocks in expectation of a rise, the larger influence of speculation, and the absorption whenever prices decline, of larger quantities by the market now existing.

These influences explain another tendency, viz.:

"(2). In later years fluctuations are more frequent. In the period after the downward price movement has commenced the market price breaks and then is restored again. It is evident that abundant capital for construction is waiting for investment and even in case of a slight decline, purchases are large and tend to bring prices to the former level.

"(3). Since 1873 the maximum price reached in each cycle tends to be less than that in the preceding cycle. This is due to invention, to the lower cost of manufacturing on a large scale, and improvements of transportation. This tendency to lower prices is a part of the progress of the time and an essential feature in each depression.

"(4). The upward movement of prices continues for a much shorter time than the downward movement. The upward movement preceding the maxi-

imum of October and November, 1872, continued for one year and nine months. The succeeding downward movement lasted until November, 1878, or six years and one month. Then an upward movement continued until February, 1880, or one year and three months; the succeeding downward movement lasted approximately five and one-half years, to the summer of 1885, to be followed by a rising movement interrupted in the United States in 1888 and 1889, of four and one-half years, or until January, 1890. It is to be noticed, however, that the rise in most grades of iron and steel for a year after the summer of 1885 was very slight. After January, 1890, the downward movement continued for seven and one-half years, to July, 1897, when prices for a year were almost stationary, to be followed by rising prices, which continued until the end of 1899 or less than a year and a half.

"(5). The rapid rise which precedes a maximum price rarely continues for more than a year. If we take anthracite and Bessemer pig-iron as the best standard, it will be noticed that prior to the maximum price of anthracite, September, 1872, prices rose from \$37 in January of that year; prior to the maximum of \$41 in February, 1880, prices had risen rapidly from \$20.75 in August, 1879, or for six months; prior to the maximum of \$19.90 in January, 1890, there was a rise from \$17 in May, 1889, or for eight months; prior to the maximum of \$25 for Bessemer pig-iron in December, 1899, there was a rapid rise from \$11 in January of the same year, or for eleven months. In many respects, the rise in

1899 was the most remarkable of all, because it had been considered by iron manufacturers in the preceding years that the equipment for production was sufficient to properly meet any increase of demand, and yet the rapid rise in that year was unprecedented. The great increase in the price of iron and steel in that year, with the steady increase in production after 1894, proves the more general use of these products for a greater variety of purposes and over an enlarged area."

For a general study of prices, bankers and merchants use Bradstreet's Index of American prices and the London Economist's Index of English prices, and tabulate or plot these at regular intervals. It will be noticed in studying commodity prices, that the fall after a year of panic, curtailment and depression is usually considerably less than the preceding rise. For this fact there are several reasons:

First. The continuous increase in the amount of active circulating medium. In normal conditions money is valued only as a means of purchasing goods. A certain amount must be kept as "till money" and for bank reserves. People only hoard money when they become frightened. Hence, an increased supply of money is ordinarily reflected in an increased demand for goods, resulting in higher prices (since there is no corresponding increase in the supply of goods offered).

The output of gold which is being supplied at the rate of over one million dollars per day* is directly

*See Prof. Irving Fisher's studies on the decrease in the purchasing power of the gold dollar.

responsible for much of the steady increase which has taken place in the world's stock of money. Indirectly, it forms the basis for credit expansion, the effect of which is even more important. The financial history of the past sixty years has been characterized by a great expansion in the use of credit instruments. Bank notes, treasury notes and bank deposits, subject to check, act as a medium of exchange and thus perform the functions of money. Most checking deposits are created by loans made to enable the borrower to purchase goods, and therefore this credit money has the same effect on prices as the same amount of specie.

Second. Another effect in maintaining high prices is the growing pressure of population on the land supply. The best mining and agricultural opportunities of the new world have been occupied. The insistent demand for raw material to clothe, feed, house, educate and amuse the steadily increasing population is continually forcing resort to less advantageous sites. These yield their product only at a higher cost per unit.

A given area of land can be made to yield more grain per acre only by the use of more fertilizer or more thorough cultivation. After a certain point is passed, additional product per acre can be obtained only at a disproportionate additional outlay in labor or capital, or both. This will not be undertaken unless the price of the products is sufficient to justify it. The resort to poorer lands, and lands farther from the market will be undertaken only under the same condition.

Broadly speaking, mining, the other great department of extractive industry, is governed by the same general principle. It is true that new and rich ore deposits are discovered from time to time, but the operation of extracting the product from known mines proceeds in a manner practically similar to the method of agriculture. Those deposits are worked first that can be worked at the lowest per-unit cost, and as these are exhausted, it becomes necessary to dig deeper into the ground, to extend operations to less easily accessible territory, or to resort to poorer grade of ore. Increasing demand is thus constantly forcing prices to higher levels.

Third. The maintenance of high prices is in part due to the rise of the standard of living which a period of increasing wealth first produces, and then establishes with a resisting power that even in times of depression resists with a new force any recession in its newly gained advantages.

Fourth. There is a final factor behind existing price levels in the forms of the wastes due to war and the maintenance of great armaments, and in the millions of misdirected capital which have helped to enhance the costs of profitable production.

Therefore, the price of commodities is one of the best of business barometers and all merchants and bankers systematically tabulate each month the "Index Number" compiled by Bradstreet or others, supplemented with figures on the price of iron, copper, cotton, etc. Such figures especially interest bankers since much more money is needed to finance a given volume

of business with high prices than with low prices. Therefore, an increase in interest rates usually follows a decided advance in commodity prices.

The following conclusions are suggested relative to "Commodity Prices."

1. *During a Period of Business Depression.*

(a) An increase in commodity prices during a period of depression, *after a period of low commodity prices*, signifies that the depression has come to an end and improvement has begun, provided such an increase has been preceded by a distinct decrease.

(b) A decrease in commodity prices is normal and signifies no improvement.

(c) No change calls for caution.

2. *During a Period of Improvement Following a Period of Depression.*

(a) An increase following a decrease signifies continued improvement.

(b) A decrease signifies a temporary check to improvement.

(c) No change calls for caution.

3. *During a Period of Prosperity.*

(a) A great increase in commodity prices signifies no further improvement, and is one of the signs of the end of this period.

(b) A decrease is very unusual and should be carefully investigated.

(c) No change calls for caution.

4. *During a Period of Decline Following a Period of Prosperity.*

(a) An increase is not unusual as commodity

prices sometimes continue to increase about one year after the decline in stocks takes place. Such an increase, however, clearly signifies that no immediate improvement may be expected.

(b) A decrease signifies that the period of decline is progressing satisfactorily and may forecast an improvement.

(c) No change is normal at the beginning of this period.

Students desiring a popular discussion of this subject are advised to read the report published by the State of Massachusetts on the "Increased Cost of Living", in May, 1910,—Robert Luce, Esq., Chairman.

The most scientific discussion of prices may, however, be found in Prof. Irving Fisher's book, entitled "The Purchasing Power of Money" and published by Macmillan & Co., New York. Professor Fisher deserves the very highest commendation for his original researches along these lines.

CHAPTER VIII

SUBJECTS RELATING ESPECIALLY TO INVESTMENT CONDITIONS

STOCK EXCHANGE TRANSACTIONS

THERE are three features in connection with the New York Stock Exchange which are of value in forecasting business conditions.

They are as follows:

1. The Quotations.
2. The Transactions.
3. The New Securities listed. (See section entitled "New Securities," page 371.)

QUOTATIONS

When studying the quotations, only a long period of time showing the general tendency should be considered. The fluctuations from day to day are of no value whatever, nor are the swings covering only a period of a few weeks. A study of the general tendency of the market, however, is of considerable value in forecasting business conditions.

If the highest point of each successive swing is higher than the high point of the preceding swing, and if the low point of each successive swing is not so low as that of the preceding swing, then the tendency of the market is upward. If the last high point and the last low point are lower than the high points and low points of earlier periods, then the tendency of the market is downward.

In order to study this matter intelligently, a plot

should be made of the average prices of the leading railroad and industrial stocks. Up until recently the rails have been the leading stocks in the market and their fluctuations have best indicated the market trend. The range of prices since 1860 of ten leading railroad stocks is given in Chapter II.

The *Wall Street Journal* publishes an average which is widely used as indicating the trend of the market. This list contains 40 stocks, 20 industrial stocks: American Can; American Car & Foundry; American Locomotive; American Smelting; American Sugar; American Tel. & Tel.; Anaconda; Baldwin Locomotive; Central Leather; Corn Products; General Electric; Goodrich; Rep. Iron & Steel; Studebaker; Texas Co.; U. S. Rubber, U. S. Steel; Utah Copper; Westinghouse; Western Union; and 20 active railway stocks: Atchison; Baltimore & Ohio; Canadian Pacific; Ches. & Ohio; St. Paul; Delaware & Hudson; Erie; Illinois Central; Lehigh Valley; Louis. & Nash.; Kansas City So.; N. Y. Central; New Haven; Southern Pacific; Southern Ry.; Norfolk & Western; Northern Pacific; Penn.; Reading and Union Pacific.

As an aid in determining the tendency of the market, merchants make a dot at the center of each movement, or midway between the high point and the low point of each main swing. These dots are then connected with a line and this line shows at a glance the tendency of the market.

When two or three plots are made, it is interesting to compare a railroad plot with one for industrials. Up until about 1911 or 1912 the railroad



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quotations almost always preceded the industrials either up or down. Since that time, however, the reverse has been true. Space does not permit a detailed account of the reasons for the change, so it must suffice to state that a change in conditions may sometimes be discerned more quickly by having the two plots, one for railroads and the other for industrials, than if both are averaged together on the one plot.

Another interesting plot is that for bond prices, and the following twenty are those which we have compiled and which we use as an index of this market:

Highest Grade Bonds—Atchison, Top. & S. Fe Gen. 4's; Balt. & Ohio g. 4's; Chic., Burl. & Q. Gen. 4's; Louis. & Nash. un. 4's; N. Y. Central 3½'s; Nor. & West 1st 4's; Nor. Pacific p. 1. 4's; Penn. Cons. 4½'s; So. Pacific 1st ref. 4's; Union Pacific 1st 4's. Second Grade Bonds—Atchison adj. 4's; Ches. & Ohio Gen. 4½'s; Chic., R. I. & Pacific Gen. 4's; Col. & So. ref. 4½'s; Denver & Rio G. 1st. Cons. 4's; Erie p. 1. 4's; K. C. So. ref. 5's; St. L., I. M. & So. Gen. 5's; So. Ry. 1st Cons. 5's; Va. Ry. 1st 5's.

Usually, a change in the bond market precedes a change in the stock market. The *New York Times* publishes a useful average of the prices of 50 stocks and 40 bonds.

If considered in a conservative manner, the tendency of the stock market is very interesting to merchants when endeavoring to forecast business conditions. This is due to the fact that a change in the stock market is often the first *visible* sign of a change in general business conditions. Railroad earnings are absolutely dependent upon business conditions, and stock market quotations are dependent upon anticipated earnings. Therefore, a rising market over a certain period of time, means

that the majority of operators believe that fundamental conditions are more sound, while a falling market means that these operators believe that fundamental conditions are unsound and unsatisfactory. In other words, a study of the stock market gives one a composite idea of the opinions of the ablest bankers and brokers. This is the reason why the stock market often turns to go down while railroad earnings are increasing, and often turns to go up while railroad earnings are still decreasing. Therefore, the one who makes the most is not only the one who guesses right, *but the one who makes the right guess first.* For this reason stock market movements are the first *public* sign of a marked change in fundamental business conditions. *All plots of prices should, however, be supplemented by a plot of what the given stocks yield in order to allow for the changes in dividend rates.*

TRANSACTIONS

A study of "Quotations," without due consideration of "Transactions," is of little value, because a rising market, during which only a few shares change hands, means very little, as such a market may be the result of manipulation. In the same way a falling market, when only a few shares change hands, may mean very little. In order to reach a correct conclusion, the "quotations" should be considered in connection with the "volume."

The volume of transactions is usually largest at about the culmination of a long swing bull move-

ment, and during severe liquidation. Between these points, however, the variations in volume are less significant. It is believed by many market traders that, in the trading from day to day, when the volume of transactions diminishes as prices fall off, and then increases as prices rise, that this shows the real trend of the market to be upward. On the other hand, when the volume is heaviest on the down grade and lighter on the rallies, a general decline may be expected.

There is probably some truth in this idea, but such matters are subject to manipulation to such an extent that one can never safely trust to such surface indications. Manipulation is always present, and there are always pools and individual operators trying to put the market up or down as suits their interest. Certain of these are said at times to control the market. Though hard to prove, this is probably true as regards many of the minor movements and short swings.

Yet no pool or group of operators, however strong, can hold up a market indefinitely, when fundamental conditions are against them, nor can they prevent a rise (though they may delay it) when fundamentals are right for a real improvement. Of course those operators who foresee aright and who conduct their operations in harmony with fundamental conditions reap great profits, and in the popular gossip are often credited with causing the movement. The merchant or investor, or the conservative speculator, basing his purchases and sales on a careful study of funda-

mental statistics, and playing for the long swings only, had better not pay too much attention to transactions, or worry himself trying to solve the mysteries of manipulation.

The following conclusions are suggested relative to "Stock Exchange Prices."

1. *During a Period of Business Depression.*

(a) An increase is a distinctly favorable sign that better trade conditions may be expected.

(b) A decrease is a sign that continued dullness may be expected.

(c) No change signifies uncertainty.

2. *During a Period of Improvement Following a Period of Business Depression.*

(a) An increase signifies continued improvement.

(b) A decrease signifies no improvement.

(c) No change signifies temporary uncertainty.

3. *During a Period of Prosperity.*

(a) A great increase usually is a very unfavorable sign and calls for caution.

(b) A great decline calls for caution.

(c) No change signifies temporary uncertainty.

4. *During a Period of Decline Following a Period of Prosperity.*

(a) An increase signifies a temporary halt in the decline.

(b) A decrease forecasts further depression.

(c) No change signifies temporary uncertainty.

NEW SECURITIES

The reason for studying the subject of "New Listings" may be understood by a review of the three following laws of economics:

1. *During a Period of Prosperity, as the number of new companies, new promotions and new securities listed increases, the danger of a panic increases and the time between said Period of Prosperity and a future Period of Depression decreases.*

2. *When the number of new promotions, new companies and new listings is at a minimum, financial depression is sure to be reaching an end.*

3. *As the number of new companies, new promotions and new listings increases from a minimum, the gradual increase is a sign of improved conditions until the normal number of new companies, new promotions and new listings is reached, after which an increase again becomes a source of danger.*

Out of the list of Statistical Sheet subjects of which this book treats, this one, "The Number of New Companies, New Promotions and New Securities Listed," is the one by which it was most clearly possible to forecast the panic of 1903. For this reason this panic was said to be due to "undigested securities" and was known as "The Rich Man's Panic."

Of course one cannot rely upon the study of this one subject, as many panics have taken place when

the figure for "New Securities" has been normal and the change in conditions could only have been forecasted by a study of the other subjects. In fact, the difficulty in studying this subject is that the figures remain very constant for a long period of time, and it is only the great movements up or down which are of any use.

Under normal conditions a study of this subject is of little value, but it is most useful under abnormal circumstances. If we are in a period of depression and we reach a period where no new companies are incorporated and there are absolutely no new promotions or listings, we may be sure of better conditions in the near future. Conversely, if we are in a period of prosperity and there are an abnormally large number of promotions, an abnormally large number of new corporations being formed and new securities being listed, we may be absolutely sure of trouble. This usually comes first in the form of tight money, followed immediately by a decline in the bond and stock market, and later by a period of depression in business conditions.

The following figures clearly show this, particularly in connection with the panic of 1903:

Year	Stocks: Total Value Including New Capital, Old and Refunding Issues		Year	Bonds: Total Value Including New Capital, Old and Refunding Issue	
1885	\$56,913,116		1885	\$197,259,000	
1886	329,469,350		1886	238,097,690	
1887	270,053,550		1887	343,477,321	
1888	248,228,275		1888	511,002,218	
1889	259,649,774		1889	389,720,000	
1890	437,992,330		1890	684,867,879	
1891	188,914,954		1891	287,645,700	

NEW SECURITIES

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Year	Stocks: Total Value Including New Capital, Old and Refunding Issues	Year	Bonds: Total Value Including New Capital, Old and Refunding Issues
1892	\$237,036,105	1892	\$317,861,500
1893	198,245,261	1893	288,803,400
1894	251,193,003	1894	309,804,600
1895	143,373,970	1895	257,275,400
1896	590,732,215	1896	582,286,700
1897	502,974,891	1897	357,415,902
1898	528,153,996	1898	700,064,680
1899	704,172,605	1899	525,384,240
1900	620,935,000	1900	443,713,000
1901	1,642,013,715	1901	923,010,100
1902	784,032,595	1902	a533,519,300
1903	426,890,295	1903	581,288,800
1904	175,866,800	1904	535,079,600
1905	533,434,900	1905	980,026,650
1906	662,769,450	1906	b571,898,500
1907	576,032,050	1907	420,813,000
1908	513,927,450	1908	872,958,000
1909	1,325,526,485	1909	1,098,956,500
1910	1,239,501,545	1910	808,162,500
1911	643,614,830	1911	580,834,400
1912	1,161,030,790	1912	654,977,750
1913	611,993,230	1913	648,066,100
1914	571,796,360	1914	488,993,000
1915	939,326,240	1915	541,192,300
1916	967,161,758	1916	1,829,186,000
1917	1,481,285,345	1917	1,626,853,550
1918	312,024,647	1918	227,634,700
1919	1,266,634,492	1919	321,002,540

(a) Does not include Imperial Russian State 4% Certificates \$1,155,000,000.

(b) Does not include \$425,000,000 Japanese Government bonds.

Therefore all the merchants systematically tabulate each month the amount of new securities admitted to the list, although the "stock" and "bonds" are added; thus avoiding the necessity of two tables.

The following conclusions are suggested relative to "New Securities."

1. *During a Period of Business Depression.*

- (a) An increase signifies improvement.
- (b) A decrease signifies no improvement.
- (c) No change signifies nothing important.

2. *During a Period of Improvement Following a Period of Business Depression.*

- (a) An increase signifies continued improvement.
- (b) A decrease signifies no improvement.
- (c) No change calls for caution.

3. *During a Period of Prosperity.*

- (a) An increase, especially if great, is a sign of the culmination of the period of prosperity.
- (b) A decrease tends to lengthen this period of prosperity and thus signifies continued improvement.
- (c) No change usually calls for caution.

4. *During a Period of Decline Following a Period of Prosperity.*

- (a) An increase signifies no improvement.
- (b) A decrease indicates that conditions are naturally adjusting themselves.

(c) No change signifies no improvement, if large issues are still being offered, but otherwise it shows nothing of importance.

CROPS AND PRODUCTION OF COMMODITIES

This subject does not now hold the same relative importance in the study of Fundamental Statistics that it once held when statistics on other topics were less carefully compiled. But the condition of the standing crops will always be interesting and valuable as a barometer inasmuch as the full annual harvest of the grains and cotton is one of the factors at the bottom of American business prosperity. Of all subjects studied by the merchant and investor it is the only one which the government attempts to forecast. Figures on banking conditions, labor conditions, imports and exports are accumulated by the government and are valuable as a matter of history; but for none of these subjects is there any official attempt to use the figures for forecasting conditions.

But in the subject of crops, not only does the government publish a report on their amount and condition in various stages from planting to the beginning of harvest, but it makes a prediction for the benefit of business interests of what the total crop is likely to be. It has been well proved that this forecast made by the government is better than any forecast which at the present time can be made by any association of merchants or bankers independently.

For this reason the method of compiling and

distributing these forecasts should be clearly understood and the following is a detailed explanation thereof:

"The title of the Bureau in charge of the preparation of crop reports has been changed from "Bureau of Statistics" to "Bureau of Crop Estimates," in order to indicate more clearly the nature of its work. As reorganized the Bureau has two main divisions, namely, a Division of Crop Reports, with a field force to collect information and an office force of tabulators and computers, and a Division of Crop Records, with a corps of statistical scientists and clerks, to compile data from published sources relating to agriculture in this country and in foreign countries.

"Statistical information concerning crop production and live stock that is collected by the slow and exact methods of a census is generally not given to the public until after the crops enumerated are harvested and marketed and the immediate interest in it has passed away. Prices of agricultural products are primarily governed by the law of supply and demand; therefore early information concerning the supply is of value to all. Those who produce and those who consume are vitally interested as well as the dealer who stands between them. The relations and mutual interests of agriculture, manufacture, and commerce demand that there should be published at brief intervals during the crop season reliable information on the condition, acreage, production, and value of the principal crops, by States and agricultural areas.

"As commerce consists largely in an exchange of the products of agriculture and manufacture among their respective producers, commerce thrives as the farmer and the factory operative prosper. Some individuals, however, do not always regard the common welfare, and injurious commercial speculations occur when ignorance prevails concerning the condition of our crops and the true relations of supply and demand. At such times the farmer often does not obtain just prices, while the consumer derives no benefit and business is injuriously affected. The consequences of false reports concerning the condition and prospective yield of the cotton crop alone may be very injurious. If there were no adequate government crop-reporting service, and by misleading reports speculators should depress the price a single cent per pound, the growers would lose \$70,000,000 or more; if the prices were improperly increased, the manufacturers and allied interests would be affected to a proportionate degree. All interests therefore demand that the true condition of crops should be made known promptly, and harmful speculation discouraged.

"The Bureau of Crop Estimates issues each month detailed reports relating to agricultural conditions throughout the United States, the data upon which these facts are based being obtained through a special field service, and through a large body of voluntary correspondents composed of the following classes: county correspondents, township correspondents, individual farmers, and special cotton correspondents.

"The special field service is composed of efficient traveling agents, each assigned to report for a given group of States. They are especially qualified by statistical training and practical knowledge of crops. They systematically travel over the districts assigned to them, carefully note the development of each crop, keep in touch with best informed opinion, and render written and telegraphic reports monthly and at such other times as required.

"The Bureau also employs a cotton crop specialist, a tobacco crop specialist, a rice crop specialist and a truck crop specialist, each of whom specializes in the crop assigned to him and travels throughout the region of its growth. Their reports supplement those of the regular state field agents.

"There are approximately 2,800 counties of agricultural importance in the United States. In each of these counties the Department has a principal county correspondent who maintains an organization of several assistants. These county correspondents are selected with special reference to their qualifications and constitute an efficient branch of the crop-reporting service. They make the county the geographical unit of their reports, and after obtaining data each month from their assistants and supplementing these with information obtained from their own observation and knowledge, report directly to the Department at Washington.

"In the townships and voting precincts of the United States in which farming operations are

extensively carried on, the Department has township correspondents who make the township or precinct the geographical basis of reports, which they also send directly to the Bureau of Crop Estimates each month. Finally, at the end of the growing season, a large number of individual farmers and planters report on the results of their own individual farming operations during the year; and valuable data are also secured from about 30,000 mills and elevators.

"With regard to cotton, all the information secured from the foregoing sources is supplemented by that furnished by special cotton correspondents, embracing a large number of persons intimately concerned in the cotton industry, and, in addition, inquiries in relation to acreage and yield per acre of cotton are addressed to the list of cotton ginneries through the courtesy of the Bureau of the Census.

"Eleven monthly reports on the principal crops are received yearly from each of the field agents, crop specialists, county correspondents, and township correspondents, and one report relating to the acreage and production of general crops is received during the year from individual farmers.

"Six special cotton reports are received during the growing season from the cotton crop specialists, from the field agents, from the county correspondents, and from township correspondents. The first and last of these reports relate to the acreage and production from individual farmers, special correspondents, and cotton ginneries.

"The general reports for January and February are combined on one schedule and relate to the number and value of farm animals.

"The general report for March relates to the stock of grain in farmers' hands, the distribution and consumption of corn, wheat, and oats, and the average weight per bushel of wheat and oats.

"Reports on the condition of the crops of the year begin with the April report, when the condition of winter wheat and rye is dealt with, prevailing diseases of farm animals, and losses from disease and exposure.

"The report for May comes at a time when few of the crops are sufficiently advanced for their condition to be reported upon; consequently the inquiries relative to condition apply only to winter wheat, rye, meadow mowing lands, and spring pasture. This schedule also deals with the portion of the original acreage sown to winter wheat if, for any reason, any has been or will be abandoned, and contains inquiries with regard to farm labor and tenants.

"The schedule for June deals with the acreage of six crops, the most important of which is spring wheat. It also covers the condition of wheat, oats, barley, rye, clover, spring pastures, apples, peaches and rice.

"The July schedule deals with the acreage of corn, potatoes, tobacco, and sugar cane; the stocks of wheat in farmers' hands; the average condition of all the principal crops, fruits, and spring pastures, and the average weight of wool per fleece.

"The August schedule deals with the average yield of winter wheat per acre, acreage of buckwheat and hay, the condition of the principal crops, the quality of clover hay, and the stocks of oats in farmers' hands.

"The September schedule deals with the condition, when harvested, of wheat, oats, barley and rye; the acreage of clover seed; the production of peaches, and the number and condition of stock hogs on hand for fattening.

"The October schedule deals with the average yield per acre and the quality of spring wheat, barley, oats, rye and hops, and the condition of corn, potatoes, sugar cane, tobacco, rice and apples.

"The November schedule deals with the average yield per acre of corn, buckwheat, potatoes, hay, tobacco and rice.

"The December schedule deals with the production and farm prices of all the principal crops, and the acreage of winter wheat and rye sown for the crop of the following year, and also with the condition of winter wheat and rye.

"In addition to the foregoing, the reports during the past few years have been extended to include condition figures of many small fruits, vegetables and minor products. Information in regard to such products has been urgently requested, and as a basis for comparison has now been satisfactorily established, the reports are received with interest and favorable comment.

"Previous to the preparation and issuance of the Bureau's reports each month, the correspondents

of the several classes send their reports separately and independently to the Department at Washington.

"In order to prevent any possible access to reports which relate to speculative crops, and to render it absolutely impossible for premature information to be derived from them, all of the reports from the crop specialists and the field agents are sent to the Secretary of Agriculture in specially prepared envelopes addressed in red ink with the letter "A" plainly marked on the ends. By an arrangement with the postal authorities these envelopes are delivered to the Secretary of Agriculture in sealed mail pouches. These pouches are opened only by the Secretary or Assistant Secretary, and the reports, with seals unbroken, are immediately placed in the safe in the Secretary's office, where they remain sealed until the morning of the day on which the reports are issued, when they are delivered to the Statistician by the Secretary or the Assistant Secretary. The combination for opening the safe in which such documents are kept is known only to the Secretary and the Assistant Secretary of Agriculture. Reports from field agents and crop specialists residing at points more than 500 miles from Washington are sent by telegraph, in cipher. Those in regard to speculative crops are addressed to the Secretary of Agriculture.

"Reports from the field service in relation to non-speculative crops are sent in similar envelopes marked "B," which go to the Bureau of Crop

Estimates, and are kept securely in a safe until the data contained in them are required by the Statistician in computing estimates regarding the crops to which they relate. The reports from the county correspondents, township correspondents and other voluntary agents are sent to the Chief of the Bureau of Crop Estimates by mail in sealed envelopes.

"The plan of intrusting the final preparation of reports to a Crop Reporting Board has been continued during the past year, and after several years of trial it has been demonstrated that such is an excellent and satisfactory method. It relieves one man of the strain and responsibility, and secures the benefits of consultation and a consensus of judgment of men who have been on the ground.

"The Crop Reporting Board is composed of the Chief of Bureau as chairman, and four other members, whose services are brought into requisition each crop-reporting day from among the statisticians and officials of the Bureau, and the crop specialists and field agents who are called to Washington for the purpose.

"The personnel of the board is changed each month. The meetings are held in the office of the Statistician, which is kept locked during sessions, no one being allowed to enter or leave the room or the Bureau, and all telephones being disconnected.

"When the board has assembled, reports and telegrams regarding speculative crops from crop specialists and field agents which have been placed unopened in a safe in the office of the Secretary

of Agriculture, are delivered by the Secretary, opened and tabulated. The reports, by States, from the several classes of correspondents and agents relating to all crops dealt with are brought together in convenient parallel columns on final tabulation slips. The board is thus provided with several separate estimates covering each State and each separate crop, made independently by the respective classes of correspondents and agents of the Bureau, each reporting for a territory or geographical unit with which he is thoroughly familiar.

"Abstracts of the weather condition reports in relation to the different crops, by States, are also prepared from the weekly bulletins of the Weather Bureau. With all these data before the board, each individual member computes independently, on a separate sheet or final computation slip, his own estimate of the acreage, condition, or yield of each crop, or of the number, condition, etc., of farm animals for each State separately. These results are then compared and discussed by the board under the supervision of the chairman, and the final figures for each State are decided upon. It has been interesting to note how often the reports of the different classes of correspondents and agents are very nearly identical and how closely the figures arrived at independently by the individual members of the board agree. The estimates by States as finally determined by the board are weighted by the acreage figures for the respective States, the result for the United States being a true weighted average for each subject.

"Reports in relation to cotton, after being prepared by the Crop Reporting Board, and personally approved by the Secretary of Agriculture, are issued on the seventh or eighth day of each month during the growing season, and the reports relating to the principal farm crops and live stock are prepared and made public on the ninth or tenth day of each month. In order that the information contained in these reports may be made available simultaneously throughout the entire United States, they are handed, at an announced hour on report days, to all applicants and to the Western Union Telegraph Company and the Postal Telegraph Cable Company, who have branch offices in the Department of Agriculture, for transmission to the exchange and to the press. These companies have reserved their lines at the designated time, and forward immediately the figures of most interest. A mimeograph or multigraph statement also, containing such estimates of condition or actual production together with the corresponding estimates of former years for comparative purposes, is prepared and sent immediately to exchanges, newspaper publications and individuals. The same afternoon data concerning principal crops in each State and totals for the United States are telegraphed to the Weather Bureau Station director in each State, and the information is printed and issued immediately to all the local papers of the State, thus insuring wide publicity to the crop reports within a few hours of their issuance at the Washington office.

"Promptly after the issuing of the report, it, together with other statistical information of value to the farmer and the country at large, is published in the *Crop Reporter*, a publication of the Bureau of Crop Estimates, under the authority of the Secretary of Agriculture. An edition of over 200,000 copies is distributed to the correspondents and other interested parties throughout the United States each month. Thus the information is spread broadcast."

As the government crop statistics are necessary and valuable as business barometers, so figures showing the *production of leading commodities* are of intense interest.

The production of iron, for example, reported by the two leading weeklies on the subject, is a very important factor in determining present conditions and forecasting future conditions. This was especially true before the United States Steel Corporation was formed and to a large extent is also true today. Figures regarding pork, copper, wool, coffee, rubber, sugar and other commodities are also of interest. A decrease in the production of commodities is always accompanied by a decrease in activity, which means that men and capital are idle. This reduced activity, if pressed beyond a certain point, will result in a crisis followed by a period of depression.

A large part of the income of the railroad lines is derived from the shipments of grain, produce and cotton. A total of 78,736,587 tons of agricultural products was given to the roads from their own

territory in the year 1910; of this tonnage, grain contributed 37,420,965 tons, flour and other mill products nearly 15,000,000 tons more, and cotton 3,023,757 tons. Some idea of the great volume of this agricultural product appears in the realization of the fact that it represents over 8% by weight of the total freight originating along the line of the railroads; while the entire soft coal tonnage originating on these traffic lines which is expected to be very large is only 257,460,017 tons, or about 33% of the total freight.

It is, therefore, not to be wondered at, that in times that are dull in the manufacturing world, or in the general trade, great wealth may be brought to the railroads, and through them to the nation, by the moving of successful crops. Years of very rich harvests, such as 1906 and 1912, may increase enormously the revenue of every railroad in the country.

If the good years have such an effect on the general prosperity of the United States, it is not surprising to see the tide turned in the opposite direction by a yield below the average. Crop values reach more than \$3,000,000,000, and a fluctuation of \$500,000,000, or over in this great total has in every way a wide-spreading effect on the business of the country. Even partial crop failures may result at once in a depression, and bumper crops may boom a stock market as no other influence has power to do. This influence operates especially through its effect on railroad earnings and on the export trade. Full crops yield a surplus for export

and help pay a nation's debt; they may create a credit and turn an adverse gold movement into a favorable balance and increased imports of gold. Viewed from all parts then, the progress of the crops and the study of crop statistics should be regarded as of the utmost importance.

One writer states:

"The country requires an increase in yield of at least 5% in all its principal crops, cotton perhaps excepted; and in some cases an increase of at least 10% would be advisable, either through larger acreage or better cultivation. This would insure more reasonable prices for food products, thus reducing the cost of living about which so much just complaint is heard. It would also stimulate larger exports, the decline of which during some years has been one of the most unfortunate accompaniments of our business depressions. Larger exports of agricultural products would do more than anything else toward restoring the equilibrium of our foreign trade and would stimulate business at home."

The profits, and therefore the stocks of railroad companies, which operate through the grain and cotton sections, are affected in the most direct and powerful manner by the promise of generous or stunted crops. Investors need to keep in touch with the crop outlook. Wall Street always discounts the future and never waits for earnings to be affected actually before adjusting prices to what it sees coming.

A slackening in the investment business comes

during a great boom and precedes every financial crisis; and every investor should be as alert to detect the signs of a coming change of importance as are the bankers, brokers and stock operators, who are continually watching the crops as well as the Compositplot.

It is axiomatic that all railroads are affected directly and seriously by crop conditions and industrial stocks peculiarly so. Therefore the subject of "Crops" is one which requires constant attention, and never more so than when a boom or reaction has run on for a number of months or years. *Conservative merchants and investors therefore tabulate each month as published, the government estimate of the wheat, corn and cotton crops, then in the ground, together with the annual figures when the crops have been harvested.*

The following conclusions are suggested relative to "Crops and other Commodities":*

1. *During a Period of Business Depression.*

(a) Improved crop conditions are often the beginning of a period of improvement.

(b) Poorer crop conditions delay an improvement in general business, or signify no improvement.

(c) No change is favorable or unfavorable according as to whether this means good crops or otherwise.

*The conditions of the crops has direct bearing upon the condition of the farmer, and an indirect interest for every investor and merchant.

2. *During a Period of Improvement Following a Period of Depression.*

(a) Improved crop conditions always give an impetus to the general improvement in conditions, and thus signify continued improvement.

(b) Poorer crop conditions usually signify no improvement.

(c) No change is favorable or unfavorable according to what it represents.

3. *During a Period of Prosperity.*

(a) Improved crop conditions tend to lengthen the period of prosperity; but bumper crops often precede a decline.

(b) Poor crop conditions tend to shorten said period, and signify no improvement.

(c) No change is favorable or unfavorable according to what it represents.

4. *During a Period of Decline Following a Period of Prosperity.*

(a) Improved crop conditions sometimes tend to forestall a panic and promote an improvement.

(b) Poor crop conditions tend to hasten said time and perhaps cause a panic.

(c) No change is or is not of importance according to what it represents.

RAILROAD EARNINGS

Railroad earnings are of interest for two reasons: *first*, in forecasting the conditions of the railroads, upon which the prices of securities are directly de-

pendent; *second*, in determining and forecasting the condition of general business.

Although stocks of roads barely earning their operating expenses and interest charges are of some nominal value simply on account of their voting power (and this value is generally considered in the vicinity of about \$10 per share, par value \$100), yet railroad stocks as a rule are worth very little unless the roads are earning money. But whether or not a stock pays a dividend, it is self-evident that the prices must vary with the earning power. Increased earnings forecast increased values for the securities, and reduced earnings forecast lower values. Manipulation may temporarily force stocks far above or far below their true investment value, but neither high prices nor low prices can artificially be maintained for long. In the end the prices must adjust themselves according to earnings. As most investments are either directly or indirectly dependent upon railroads, railroad earnings are of great importance to the investor.

For the purpose of forecasting general business conditions, railroad earnings are also of interest. As statistics they are so important for this purpose that many merchants consider railroad earnings second only to bank clearings in making up a barometer of actual business conditions. There are several reasons for this choice, of which the two following are especially well founded:

- (1) Because nearly all bills are paid in checks, bank clearings serve as a barometer of the total

amount of sales; but railroad earnings likewise serve as a similar barometer, because practically all goods purchased or sold are shipped on the railroads. If the freight earnings of the United States show an increase, it is very evident that manufacturing and commerce are increasing; and the same is true conversely, if the freight earnings are decreasing. Therefore the earnings of the railroads may be considered in the same manner as the clearings of the banks, especially when "tonnage," rather than cash receipts is considered.

(2) Another important reason is that not only are railroad conditions a barometer of trade conditions, but to a large extent they are the *basis* of general trade conditions. This is due to the fact that the railroads employ so large a proportion of the working class population of the United States, and that so many industries are absolutely dependent on the railroads for their business. The railroads are the best purchasers of contractors' supplies and contract labor; of iron and steel for rails and bridges; of lumber for ties and stations; of coal for motive power and heating; of oil for lighting and lubricating; of printers' supplies for time-tables, tickets, etc., etc. In fact this list might be indefinitely extended to show that the prosperity of the country is inseparably connected with the prosperity of the railroads.

Therefore, for the above two reasons, the wise investor and merchant very carefully watches railroad earnings, both for determining the present conditions and for forecasting future conditions.

In this connection the history of railroad earnings during the past three depressions may be of interest. During the reaction of 1873 the high level of gross earnings was reached in the same calendar year as the panic itself, but the recession from this high point was fairly evenly spread over the next four years. The recovery, on the contrary, was strikingly rapid. In 1879, only two years after gross earnings had been at their worst, they had nearly regained their former high level, and this was steadily raised.

By reducing "maintenance charges," the net earnings increased for a year after the reaction began, the gain between 1873 and 1874 having been more than three percent. Thereafter net earnings declined along with the gross, to their low level in 1877. In the following two years they recovered even more rapidly than gross earnings, making up most of their lost ground in one year. The reaction between the top and bottom levels in net earnings was practically 10%, but between the years in which the gross receipts sank from top to bottom levels, the difference in net was considerably less. Moreover this decrease was accompanied by an increase in mileage of nearly 12%.

While the panic of 1873 severely checked railroad construction, it by no means checked such development altogether. This crisis followed one of the most pronounced waves of railroad construction ever witnessed. In two years (1870-72) preceding the panic, operated mileage increased by about 13,250 miles, or 25%, which of course is always a distinct danger signal.

The depression of 1884-5 differed from other depressions in the relation of operating expenses to volume of business. In 1894 the percentage decline in net earnings was a trifle less than that of gross; but in the '80's the lessening volume of traffic was not accompanied by a proportionate reduction in earnings. The comparison of top and bottom levels in this depression follows:

	Mileage	Gross	Net
1883	106,938	\$807,112,780	\$291,587,588
1885	123,320	772,568,883	269,493,931
Decrease	*16,382	34,543,897	22,093,657
Percent	*15.3	4.2	7.5

*Increase.

"In so serious a crisis as that of the '90's, the maximum reaction in railroad earnings was not more than 12%. However, aggregate figures covering so many railroads of such wide diversity of location and condition tend to obscure the facts as they apply to individual undertaking. Constant addition of new mileage tends to reduce the record of damage sustained by the old roads. The reduction of the figure to a mileage basis would still be an inaccurate test, because the earning power of new and additional mileage is naturally low. Furthermore, construction of new roads frequently takes away business from those roads already in existence, and thus tends to lower the average earnings per mile without any actual decrease in the amount of business. A comparison between fat and lean years could best be made by using figures for identical mileage."

Aggregate railroad earnings reached a new high level in 1893 and again acted as a distinct danger signal, for the crisis itself took place in the second half of that calendar year. The reaction in general business came the next year, when both gross and net immediately reached the low level of that movement. The recovery, though slow, was fairly continuous throughout five or six succeeding years. The extent of the reaction from the top level of 1893 to the bottom level of 1894 is shown in the following figures:

	Mileage	Gross	Net
1893	175,442	\$1,207,106,626	\$358,648,918
1894	178,054	1,066,943,358	317,757,399
Decrease	*2,613	140,163,268	40,891,519
Percent	*1.5	11.6	11.4
1907	224,382	2,602,757,503	833,339,600
1908	230,085	2,407,019,810	717,802,167

*Increase

The next high point was reached in 1907, when the aggregate mileage increased to 228,128, the aggregate gross to \$2,602,757,503 and the aggregate net to \$833,339,600. This gross and net fell off simultaneously with the decrease in business, an aggregate total of about 8%, the low point having been reached in the latter part of the summer of 1908. After that time there was a gradual improvement up to 1911, when net earnings were reduced about 2%.

It therefore is advisable for merchants and investors to select about ten large roads, operating in different parts of the country and systematically tabulate their gross earnings as published each month. As the final

figures for all roads are published they also are interesting to note; but for practical purposes it is much better to tabulate the earnings of the same ten roads.

The following conclusions are suggested relative to "Railroad Earnings.".*

1. *During a Period of Depression.*

(a) An increase signifies that conditions are improving.

(b) A decrease signifies no improvement.

(c) No change usually signifies uncertainty.

2. *During a Period of Improvement Following a Period of Depression.*

(a) An increase signifies that the improvement in conditions is progressing satisfactorily.

(b) A decrease signifies no improvement, or that the improvement is temporarily checked.

(c) No change signifies nothing definite.

3. *During a Period of Prosperity.*

(a) A great increase usually signifies the culmination of the period of prosperity.

(b) A decrease during a period of prosperity is practically impossible.

(c) No change calls for caution

4. *During a Period of Decline Following a Period of Prosperity.*

(a) An increase signifies no immediate improvement can be expected.

*The tabulation of Railroad Earnings is of great value to the merchant but the investor must remember that the stock market declines *before* earnings decline, and that prices begin to increase several months *before* earnings show any increase.

(b) A decrease signifies that conditions are rapidly becoming worse.

(c) No change signifies nothing definite.

IDLE CAR FIGURES

Idle car figures have been available only for a comparatively short time and investors and merchants have as yet given but little attention to this subject. They are, however, of even more direct interest in forecasting business conditions, than are figures on "Railroad Earnings." In fact, idle car figures bear the same relation to railroad earnings as Government crop estimates bear to the final figures compiled after the crop has been gathered.

These idle car figures are collected by the American Railway Association which receives every month from the officials of each railroad, the number of their surplus cars or the number of the cars they are short, as the case may be. Of course no one railroad will report at any given time both a surplus and a shortage; but it is very natural for certain roads in certain localities to have a surplus, while other roads in an entirely different locality may report a shortage. All of these "surpluses" and "shortages" are combined and reported in a total by the Association once each month.

As in the case of exports and imports, it is the balance, namely, the "net surplus" or "net shortage" that the investor or merchant watches with interest. It takes about six weeks for a car to be taken from a siding, looked over, loaded, delivered and unloaded, and furnish its revenue. Then

as the railroads do not publish the earnings of a car for about a month or more after received, it may be three months after a car is taken from the siding before the earnings of that car appear in the monthly statement. Temporarily, the idle car reports are not published regularly, but they will doubtless be resumed later.

Therefore, by tabulating idle car figures the investor and the merchant are able to forecast the publication of an increase or a decrease in railroad earnings almost three months before its appearance. As railroad earnings are such an excellent barometer of trade conditions, so idle car figures serve as even a more valuable barometer, the only unsatisfactory feature being that they do not include the cars in the repair shops.

Note:—The American Railway Association divides its report into eleven divisions with a minimum of 153 roads located as follows:

	No. of Roads
New England	7
N. Y., N. J., Del., Md., & E. Pa.	23
Ohio, Ind., Mich., & W. Pa.	25
Va., W. Va., No. Car., & So. Car.	9
Ky., Tenn., Miss., Ala., Ga., & Fla.	17
Iowa, Ill., Wis., Minn., the Dakotas	22
Mont., Wyo., & Neb.	2
Kans., Colo., Okla., Mo., & Ark.	16
Tex., La., and New Mex.	9
Ore., Idaho, Cal., Nev., & Ariz.	19
Canadian Lines	4
Total	153

The following conclusions are suggested relative to "Idle Car Figures."*

1. *During a Period of Business Depression.*

(a) An increase of idle cars signifies no improvement.

(b) A decrease signifies that a change for the better may be expected.

(c) No change signifies that caution is still necessary.

2. *During a Period of Improvement Following a Period of Depression.*

(a) An increase in idle cars signifies no improvement.

(b) A decrease signifies improvement.

(c) No change signifies that caution is still necessary.

3. *During a Period of Prosperity.*

(a) An increase in idle cars calls for caution.

(b) A great decrease or a car shortage calls for caution.

(c) No change signifies nothing unsatisfactory.

4. *During a Period of Decline Following a Period of Prosperity.*

(a) An increase is natural.

(b) A decrease suggests a check in the decline.

(c) No change signifies no improvement.

*Idle car figures are of great value to both merchant and investor as they forecast earnings. When the actual earnings are published it is often too late for the investor to profit thereby, as their effect has already been discounted. This, however, does not apply to idle car figures.

POLITICAL FACTORS

Some of the most successful merchants of the old school maintained that the three greatest factors which influence business conditions are crops, money and politics, and that of these the most important is the last named, politics. Certainly this statement appears reasonable to some, but it is probable that political as well as social changes are largely governed and influenced by other fundamental business conditions. For instance, at a time of great expansion of business when commodity prices are rising, the common people gradually get disgruntled and wish a change in administration. On the other hand, at a time of depression the political party in power is likely to suffer from the liquidation in wages and customary hard times. In fact, once in every little while the populace assumes control, institutes a few improvements, but soon becomes divided by contentions, and again capital and the conservatives are given the reins. Nevertheless a study of politics as reflecting the underlying conditions of the country is quite necessary. That portion of American history with which these pages are most concerned, from 1860 up to the present time, is most admirably described by Alex. Dana Noyes in his "Forty Years of American Finance."

There has always been a most delicate relation between politics and the state of trade. Almost every period of depression and period of prosperity, although not wholly due to political conditions, has been greatly augmented by them. Among

those various political factors may be mentioned the following:—

The "Embargo Act" in the early part of the century and the war of 1812.

The establishment of the United States Bank.

The discontinuance of the United States Bank.

The beginning of "state rights" discussions.

The slavery discussion and the Civil War.

The "Reconstruction Acts."

The inflation of the currency.

The "Resumption Act."

The silver coinage law.

The resumption of specie payments.

The circulation of silver certificates.

The radical measures under President Arthur, followed by the panic of 1884.

The campaign and the election of the Republican Party in 1888, coincident with the period of prosperity.

The silver purchase act and the great gold exportations followed by the panic of 1893.

The tariff legislation of the '90's followed by the prosperous conditions of 1900.

The various Bryan scares.

President Roosevelt's campaigns against trusts.

Continuation of campaigns against trusts under President Taft's administration.

The organization of a national Progressive Party, and the victory of the Democratic Party in 1912.

Anti-trust legislation and the tariff, income tax and currency laws of 1913.

Federal Reserve system inaugurated in 1914.

War measures.

Of all these various acts, by far the most influential were those affecting the currency and the tariff. Both of these are extremely sensitive questions.

Any change in the money standard or banking system, especially if it disturbs either foreign or domestic confidence, is very destructive to the commercial prosperity of the country. Even when banking questions or the money standard are discussed in Congress, there seems to be an immediate division of interests between the producer or the manufacturer and the banker or the investor. The legislation desired by the producer seems to be opposed by the investor and vice versa. The reason for this is very evident, for anything which tends to make money easier to the producer, depreciates the value of money in the hands of the bankers and investors who possess it. On the other hand, legislation which strengthens the importance of the banker and investor, tends to handicap the producer and manufacturer.

Any legislation designed to reorganize the banking system of the United States on anything but a gold basis, like that upon which the banking systems of England and other countries are founded, always retards trade. Any legislation which gives any additional importance to gold is always greeted with approval by all classes of manufacturers, merchants and investors. All other legislation, especially that recognizing as a standard, silver or anything other than gold, is always a dangerous sign, often causing bankers and investors to call loans and raise rates. Such conditions usually precede a general crisis.

As to the propriety of high or low duties on foreign goods, this is an open question. Although nearly all bankers are in favor of protection, yet most economists (on whose advice the bankers depend regarding many matters) are almost without exception against heavy protection; but whether high tariff for protection or low tariff for revenue only is best for the country, the fact remains that whenever the subject is discussed and whenever there is to be a change in classifications or duties, this discussion and legislation has always affected business conditions. Moreover, although the adoption of certain tariff legislation may give a great impetus to prosperity, yet the previous discussion of the subject has always tended to disturb confidence, promote a feeling of uncertainty and seriously check business.

This is very well described by Henry Hall as follows:—

“In the United States the business world has become accustomed to the protective principle and even the prospect of reduced duties has always chilled the spirit of enterprise, while the reality has always given a setback to business, sooner or later. On the other hand, enactment of protective tariff, in lieu of one for revenue only, has always proved exciting and has quickened into intense activity the looms, forges and machinery of the entire country.

“The backward state of American industry prior to the Civil War is held to have been due in large measure to the relaxation of protection under

the tariff laws of 1842 and 1857. There can be no question that the twenty or more tariff enactments from 1861, when the Morrill protective tariff went into operation, to 1872 when the system had been fairly adjusted to the requirements of home industry, aided materially in developing the mines, sustaining the factories against foreign competition, supplying the railroads with an immense and profitable traffic, and promoting the farming interest of every section of the States."

The lower duties of 1883 on many manufactures, added to the force of other evil influences, ended in the crisis of 1884. The crisis of 1893 rose in a distinct measure from the agitation in the then Democratic Congress for a tariff for revenue only, which eventuated in the Wilson bill. The prosperity which the States subsequently enjoyed must be attributed in a marked degree to the protective tariff enacted under President McKinley.

All writers on crises agree in giving great weight to tariff changes. An investor should therefore at all times be fully informed with regard to such actual or possible revolutions in political control at Washington as are likely to have a bearing on the tariff laws. As a further illustration of this subject the setback given business during the tariff discussion of May to July, 1909, and the renewed business energy which followed upon the passing of the bill is of suggestive interest.

Therefore successful bankers, merchants and investors always carefully watch political conditions and

if possible reduce them to a decimal or barometer index number.

The following conclusions are suggested relative to "Political Uncertainties":*

1. *During a Period of Business Depression.*

(a) An increase in political agitation usually signifies no improvement.

(b) A decrease usually signifies an improvement.

(c) No change is unfavorable or favorable according to whether or not any important measure is under consideration.

2. *During a Period of Improvement Following a Period of Depression.*

(a) An increase in political agitation usually signifies no improvement.

(b) A decrease usually signifies an improvement.

(c) No change is unfavorable or favorable according to whether or not any important measure is under consideration.

3. *During a Period of Prosperity.*

(a) An increase in political agitation forecasts a decline.

(b) A decrease often signifies continued improvement.

*This assumes all political factors to be unfavorable and the best conditions to be when only routine business is being considered. However, there are times when certain political acts are distinctly favorable, and then the reverse of these conclusions should apply.

(c) No change is unfavorable or favorable according to whether or not any important measure is under consideration.

4. *During a Period of Decline Following a Period of Prosperity.*

- (a) Same as above.
- (b) Same as above.
- (c) Same as above.

Of course, if some legislation is under discussion the enactment of which would greatly relieve the situation, then an "increase" would be distinctly favorable, and a decrease distinctly unfavorable.

SOCIAL CONDITIONS AND MISCELLANEOUS
STATISTICS

The condition of public opinion in the country as a whole, and the stand taken by any large number of people, or a representative body of people, with regard to social or religious questions, exerts a constant influence upon business conditions. Not only in politics and the larger field of government as shown in election or municipal reforms, but in all religious or social movements, the feeling of the people should be watched closely. Most investors and merchants look upon crops, money and politics as the three most important topics to study in order to form a clear idea of the present state of business and a sound judgment of what is to be expected. They would also do well to look into the field of social and religious tendencies, because they

will find there material of great use in determining the trend of business.

From time immemorial, periods of prosperity have been accompanied by a decline in religious interests and by a laxness in moral and social customs. Conversely, a period of hard times and business depression always brings men back to religious thoughts and worship. A striking illustration of this is found in the panic of 1857. "It was in October of this year (1857) that Mr. Lamphier, a missionary of the Dutch Reformed Church, thought in his own heart, that an hour of daily prayer would bring consolation to afflicted business men!"* In a few weeks those holding meetings were astonished to find crowds growing too large for the buildings. The Methodist Church on John Street and the Dutch Reformed Church on Fulton Street were opened daily. Next Burton's Theatre was hired, and throughout the winter, noonday prayer meetings were held at numerous places in the city. "Even the firemen and policemen held their prayer meetings, so that we may feel perfectly assured of the truth of what the writer says when he adds, 'It is doubtful whether under heaven was seen such a sight as went on in the city of New York in the winter and spring of the year 1857-1858'. From New York as a centre, the mysterious influence spread abroad till it penetrated all New England in the East, southward as far as Virginia and even beyond, westward to Buffalo, Cincinnati, Chicago, St. Louis." The American Civil War was followed

*Ross' "Social Psychology," page 78.

by great financial and social corruption, and even General Grant, although himself incorruptible, could not save his country from the effect of greed and wrongdoing.

The famous election which followed was noted for the frauds which characterized both parties, and these frauds were so gigantic that to this day it is uncertain whether Tilden or Hayes was actually elected President of the United States. As is the case during all such periods of personal, commercial and civic corruption, this period was followed by the great business depression beginning about 1873.

Immediately following this depression a period of religious and civic revivals swept over the nation. The additions to churches, the great temperance movement, and other similar movements for righteousness received an unprecedented impetus during these years following the panic of 1873. This return to righteousness was again followed by a return of prosperity in the early '80's.

The nation, however, soon forgot whence these blessings came and religious interest again declined. This lack of interest in religious matters culminated in the panic of 1884. Once more the reign of ungodliness was checked and the country recuperated from the depression of 1884, and again enjoyed several years of wonderful prosperity. It, however, took the nation only a few years to forget again, and once more civic corruption, social immorality and intemperance began to increase. From 1890 to 1893 religious and similar organizations showed

very little growth. Consequently the era of prosperity began to wane, and culminated in the panic of 1893.

The panic of 1893 again brought people to think upon serious matters, and during the following few years there was a great revival of righteousness throughout America. In fact, the additions to churches and the growth of other religious movements even exceeded that during the period following the panic of 1873. The people again cast aside luxuries, municipal and state governments were purified, evil doers were replaced by men of high integrity, and great interest in all religious and moral undertakings developed in all parts of the country.

People again lived in a decent and God-fearing manner in accordance with what their station permitted. Commercial houses forsook the careless and questionable methods used during former times and the old-fashioned "drummer" was replaced by the modern high grade salesman. It was on this foundation that the new period of improvement started and it was due to this revival of righteousness, that the country was able to enjoy many years of great prosperity which began simultaneously with the close of the Spanish War in 1898 and 1899.

Unfortunately, however, the nation again forgot and was still unable to stand the temptations of a period of prosperity. Therefore again religious interest declined, political corruption re-opened

and social immorality increased. Referring to these conditions Dr. Lyman Abbott once stated as follows:

"Popular rumor attributed to Mr. McKinley's managers, although not to him, wholesale corruption in securing his first nomination and his first election. This corruption has not been confined to any one locality or to any one party. It has been equally appalling in its dimensions in New York, Boston, Philadelphia, Cincinnati, Chicago, St. Louis, Minneapolis, Denver and San Francisco. It has included not only Boards of Aldermen but Legislatures, and it has crept into both the administrative and legislative departments of the Federal Government. Two United States Senators and three United States Representatives have subjected themselves to criminal prosecution for participation in frauds. Nor has this corruption been confined to political circles. Insurance companies, banks, trust companies, manufacturers and trade unions have all been implicated. More than one financial magnate is now serving a sentence for fraud. Others are under sentence and are awaiting the decision on appeal. Even judges have not been wholly free from suspicion of obligation for their election to the plutocracy."

This is a description of the conditions from 1902 to 1906, when the exposures commenced. Like all preceding periods of unrighteousness, this was followed by the panic of 1907, and the succeeding years of depression.

Of course some writers, although admitting that

a business depression revives interest in religious matters and that, during great prosperity, men do not have the time or inclination to give religious matters any thought, claim that the religious state of the nation does not affect the business conditions as here represented. Whether or not this is true, is debatable; but certainly a study of the history of the United States *and every other nation*, seems to point to a definite relation between the two interests. Moreover, all economists agree that the religious condition of the country is distinctly worthy of study,—although they may disagree as to its relative importance compared with other subjects.

Thus Ex-President Taft said: "The hum of prosperity and the ecstasy of great profits are likely to dull our interest in these reforms and to lead us back again to the old abuses, unless we insist upon legislation which shall clinch and enforce those standards by positive law."

And again: "The difficulty is that whenever everybody is prosperous, when everybody is comfortable, then is the time when our old friend Satan steps in and helps along the evil cause; then is the time when we are apt to be inert and enjoy the things we have, without looking forward in the future and seeing that evils will grow and ultimately swamp us."

Or to quote another authority:

"Beware lest . . . thou say in thine heart, 'My power and the might of mine hand hath gotten me this wealth.' But thou shalt remember the Lord thy God, for it is He that giveth thee power to get wealth." Deut. 8: 11, 17, 18.

STATISTICS SHOWING INCREASE IN THE MEMBERSHIP OF CONGREGATIONAL CHURCHES IN THE UNITED STATES BY PROFESSION

(This denomination is chosen as an illustration owing to its complete reports; but it is believed that the same changes from one year to another would be true of an average of the figures of all denominations.)

Year to July	No. of Churches	Add. Mem- bers by Profession	Total New Members	Business Conditions	Additions by Profession per 100,000 Population
1860	2,585	7,468	14,821	Decline.....	24 Persons
1861	2,555	5,522	12,151	Depression.....	17 "
1862	2,580	6,196	12,629	"	19 "
1863	2,652	7,765	14,378	Prosperity.....	23 "
1864	2,667	9,032	15,809	Decline.....	27 "
1865	2,723	11,030	18,442	Depression.....	32 "
1866	2,780	11,249	19,994	Improvement....	32 "
1867	2,810	19,127	30,210	"	53 "
1868	2,951	16,432	28,246	Prosperity.....	45 "
1869	3,043	15,167	27,373	"	40 "
1870	3,121	13,501	25,137	Decline.....	35 "
1871	3,202	13,271	23,343	"	34 "
1872	3,263	13,945	25,394	"	34 "
1873	3,325	13,216	24,620	"	32 "
1874	3,403	15,279	27,300	Depression.....	36 "
1875	3,437	17,306	29,645	"	39 "
1876	3,509	20,844	33,294	"	46 "
1877	3,564	24,138	35,111	"	52 "
1878	3,620	20,498	31,735	Improvement....	43 "
1879	3,674	16,689	27,506	"	34 "
1880	3,745	12,230	22,749	Prosperity.....	24 "
1881	3,855	11,311	22,646	"	22 "
1882	3,936	13,539	25,895	Decline.....	26 "
1883	4,010	14,800	28,377	Depression.....	28 "
1884	4,092	17,923	32,055	"	33 "
1885	4,170	21,729	37,135	"	39 "
1886	4,477	27,166	43,185	Improvement....	47 "
1887	4,404	41,156	67,530	"	70 "
1888	4,569	25,994	45,036	Prosperity.....	43 "
1889	4,689	29,286	49,859	"	48 "
1890	4,817	27,592	47,782	"	44 "
1891	4,985	30,614	52,086	Decline.....	48 "
1892	5,140	31,582	54,576	"	49 "
1893	5,236	34,444	57,561	Depression.....	52 "
1894	5,346	38,853	62,946	"	58 "
1895	5,486	35,327	57,932	"	51 "

Year to July	No. of Churches	Add. Mem- bers by Profession	Total New Members	Business Conditions	Additions by Profession per 100,000 Population
1896	5,546	32,147	54,640	Improvement. . . .	46 Persons
1897	5,614	31,090	52,211	"	44 "
1898	5,620	25,189	44,492	Prosperity	35 "
1899	5,604	24,514	44,185	"	33 "
1900	5,650	27,101	48,602	"	36 "
1901	5,753	28,398	49,879	"	37 "
1902	5,821	29,195	51,627	Decline	38 "
1903	5,900	29,403	51,521	Depression	36 "
1904	5,919	30,193	58,198	Improvement	37 "
1905	5,931	34,881	57,722	Prosperity	42 "
1906	5,923	32,890	56,543	"	38 "
1907	5,989	34,642	59,346	Decline	40 "
1908	6,006	35,100	59,792	Depression	40 "
1909	5,991	34,245	62,461	"	38 "
1910	6,033	30,582	57,689	Prosperity	33 "
1911	6,048	30,319	57,667	Depression	32 "
1912	6,064	30,776	57,662	Transition	32 "
1913	6,096	34,294	61,430	Decline	36 "
1914	6,093	40,787	68,467	Depression	42 "
1915	6,103	43,172	70,026	Improvement	43 "
1916	6,089	42,081	68,259	Prosperity	42 "
1917	6,050	39,624	65,734	"	38 "
1918	6,019	29,467	51,372	"	28 "
1919	5,959	33,852	59,922	"	32 "

The following conclusions are suggested relative to "Social Conditions":

1. *During a Period of Business Depression.*

(a) An increase in social righteousness signifies an improvement.

(b) A decrease in social righteousness signifies no improvement and that conditions may become worse.

(c) No change signifies uncertainty.

2. *During a Period of Improvement Following a Period of Depression.*

(a) An increase in social righteousness signifies continued improvement.

(b) A decrease signifies no improvement or that the improvement may temporarily be checked.

(c) No change signifies that caution should be used.

3. *During a Period of Prosperity.*

(a) An increase in social righteousness signifies continued improvement.

(b) A decrease signifies no further improvement, but that a change for the worse may be expected.

(c) No change calls for caution.

4. *During a Period of Decline Following a Period of Prosperity.*

(a) An increase tends to shorten the period of decline and signifies an improvement.

(b) A decrease signifies no improvement and tends to make the coming period of depression all the more severe.

(c) No change signifies the same.

MISCELLANEOUS STATISTICS

Among those miscellaneous statistics which are tabulated by some bankers and merchants may be mentioned the following:

Statistics on Losses and Wastes.

Statistics on Changed Conditions.

Absorption of Capital.

Results of Invention.

Economies due to Improved Methods.

Statistics on Frauds and Lack of Credit.

The Abuse of Credit.

The Contraction of Circulating Mediums.

Overproduction.

Psychological Tendencies.

Military Armament.

Income Taxes.

Excise and Internal Revenues.

Associated Charity Reports.

Velocity of Circulation of Money.

All of the above have some distant bearing either for diagnosing present conditions or for forecasting future conditions; but none are sufficient in themselves, and when studying any one, due weight must be given to all of the others. The figures on any one of these subjects are of value only in their relation to the other figures which we have previously considered. *As, however, none of these miscellaneous subjects are of sufficient importance to the merchant or investor for him to collect and tabulate figures, no immediate thought need be given to them.*

CHAPTER IX

A TALK ON COPPERS

AS seen in preceding chapters, the laws of trade and finance necessitate a fluctuation in the price of all staple commodities. The *tendency* of the price of many commodities is upward. This is owing to several causes, among which may be mentioned the increase in the circulating medium and the increased consuming power of a rapidly growing population. There is a constant increase in demand which the increase in supply does not fully equal. When, however, this course of prices is represented *graphically*, it will be found that the lines are not straight, but "zig-zag." Although each low point may not be as low as the preceding low points and the general tendency may be upward, yet there is a continual fluctuation. A careful study will further show that these abrupt changes occur at intervals of every few years and are certain to come, although with no set regularity.

Many reasons to prove this latter statement may be offered, but we will confine ourselves to one. If any one commodity continued always to increase in price, without the fluctuation above mentioned, the tendency would be for every one to enter the business of manufacturing, selling or investing in that one commodity.

Of course there is a great difference in the fluctuations of different commodities as some com-

modities fluctuate in price much more than others; and it is more difficult to understand the laws affecting the fluctuation in the prices of some commodities than of others. It is possible, however, to see the general trend of all prices taken as a group. As the country passes from periods of prosperity to periods of depression and vice versa, the general average price of commodities fluctuates as well as the average price of stocks.

Therefore it is very important to the investor to anticipate changes in business conditions by obtaining and studying the necessary statistics. Like the farmer, the investor must be first willing to purchase and plant the seed before expecting to reap a harvest. The majority of investors have not enough patience to spend money in obtaining data and wait for results which are not immediate. There are also a great many people who, although believing that prices must be lower in a year or so, have not sufficient self-control to wait a year before investing a given amount of money. Money "burns in their pockets," and, as soon as they accumulate a certain amount, they seem determined to invest it, even though they know that by depositing it in a bank and waiting they can purchase the same stocks for one-third of the price later on. The same class of people are also the ones who have not sufficient self-control and energy necessary to sell their securities in times of great prosperity.

To those, however, who are willing to spend money in accumulating the necessary data and

who have the self-control to act in accordance with their better judgment, the opportunities to make money are unlimited. Such persons can, moreover, confine themselves to absolute and outright cash purchases and invest in only the most conservative stocks, based on standard commodities. We cannot here study the application of the above theory to all classes of commodities and all classes of stocks. Therefore, as an illustration, only one application will here be considered: namely, that of purchasing and selling high grade standard dividend-paying copper stocks in accordance with the market price of copper.

Instead of endeavoring to explain the details of the system as used in purchasing steel stocks, cotton mill stocks, and other securities, the point of this chapter is to show how it works with one single commodity such as copper. There are two main requirements:—*first*, that one must keep in constant touch with business conditions; and *second*, that one must always keep informed of the best mines, realizing that the relative conditions of mines change from one year to another.

It is impossible for a broker to give a rule such as that copper stocks should be sold when the price of metal is above 24 cents and bought when the price of metal is below 14 cents; for one year 24 cents may be high and another year it may not be high. Moreover, the safest stocks today may not be those in which it was best to invest a few years ago. It the fore is necessary to obtain data

on these points from some reliable agency operated for the purpose. The press cannot be relied upon for this information, for reasons that can be readily understood. It is impossible for the press always to state the facts, *especially when the outlook is unfavorable.*

One can best obtain an idea as to whether the present price of copper is low or high from a study of fundamental statistics. Tables showing the high and low prices of the metal, over a long period of years, should of course, also be studied; but these figures are not nearly so important as figures on "Clearings," "Failures," "Foreign Trade," etc., by which the movement in the price of metal may be forecasted. *The price of the metal bears the same relation to the price of copper stocks as railroad earnings bear to the price of railroad stocks. After the price of the metal publicly changes, it is too late to trade in the stock. In order to successfully trade in the stock, one must, therefore, forecast changes in the price of the metal. This can be done only by a study of fundamental statistics relating to general business conditions.*

The next difficulty comes in selecting a list of mines in which to invest. The following table gives a list of twelve coppers showing what the companies would theoretically earn with copper at 28 cents a pound and under. These figures are not exact, as they are based on the assumption that the cost per pound will be constant, whatever the output, when in reality the smaller the output, the

greater the cost per pound.* These figures, therefore, may be taken as maximum figures throughout.

	14c	16c	18c	20c	24c	28c
Anaconda.....	\$6.33	\$9.14	\$11.95	\$14.76	\$20.38	\$26.00
Cal. & Ariz....	7.27	9.69	12.11	14.53	19.37	24.22
Cal. & Hec.(†)	33.75	48.75	63.75	78.75	108.75	138.75
Chino.....	5.74	7.44	9.14	10.84	14.24	17.64
Copper Range..	6.21	8.29	10.37	12.45	16.61	20.76
Granby Cons...	8.22	13.21	18.20	23.19	33.17	43.15
Greene-Cananea	4.52	6.78	9.04	11.30	15.82	20.34
Inspiration....	6.08	8.11	10.14	12.17	16.23	20.29
Miami.....	3.34	4.68	6.02	7.36	10.03	12.71
Mohawk.....	9.30	12.40	15.50	18.60	24.80	31.00
Old Dominion..	6.82	9.55	12.28	15.01	20.47	25.93
Osceola.....	7.28	11.44	15.60	19.76	28.08	36.40
Quincy.....	6.00	10.00	14.00	18.00	26.00	34.00
Ray Cons.	2.34	3.33	4.32	5.31	7.29	9.27
Utah Copper..	8.28	10.77	13.26	15.75	20.73	25.71

(†) Earnings do not include income from securities owned.

Such tables are compiled by taking the present output of the mine and its net cost per pound† of the ore mined. The investor then deducts this cost per pound from the selling price given in the table, ascertains the profit per pound, multiplies the profit per pound by the output, and divides by the number of shares outstanding.

There is another factor which enters: namely, that as the price declines, the production decreases. Therefore with a price of 14 cents probably only three-fifths as much copper is mined as at a price of 24 cents, and therefore the figures on the above table should be correspondingly cut down. From the various reports of the companies, the output of each mine can be obtained without difficulty, and one can at any time ascertain the relation

*This is not absolutely true as the price of labor generally decreases as the output decreases.

†Consider the present cost, for instance, to Chino 6.75 cents; to Lake 10 cents; to Copper Range 8 cents; to Osceola 10 cents.

of the actual output to the maximum output and reduce the figures in the preceding table accordingly.

In a broad way, the high-cost producing mine suffers relatively the most by a decline in the metal market, although of course, in the matter of a loss in share earnings, the capitalization must also be taken into account. For instance, take two imaginary cases. Company No. 1 and Company No. 2 both have the same share par value. The former has 250,000 shares and makes its copper for 8 cents per pound. The latter has only 50,000 shares and makes its copper for 12 cents per pound. We will assume that copper falls from 18 cents to 13 cents and that the production is the same for both companies, namely 10,000,000 lbs. With the price of the metal at 13 cents instead of 18 cents, the profits of the first company would be cut in half, or from \$4.00 per share to \$2.00 while the profits per share of the second company would be only one-sixth what they would be at 18 cents and would drop from \$12.00 to \$2.00. If, however, the second company had the same capitalization as the first, namely 250,000 shares, then the drop would be from \$2.40 per share with copper at 18 cents to 40 cents per share with copper at 13 cents. A fluctuation of 1 cent in the price of copper means a difference of 40 cents per share in the profits of No. 1 and a difference of \$2.00 per share to No. 2.

Figuring in this manner, a one-cent drop in copper shrinks the profits of Granby about \$2.49 per share, Copper Range about \$1.04, and Quincy approximately \$2.00. Of course after reaching

this point it is possible to go a step further by ascertaining the percent earned on the selling price, as well as the percent earned on the par value which is ascertained by the above method.

Such reasoning results in the following rules for practical investing:

1. Make a list of the standard dividend paying stocks of companies which issue complete reports.
2. Star on this list the names of such companies as are doing a sufficient amount of development work, and which have ore blocked out for a long period of years.
3. Select the stock from among those which are starred which, *with copper at a low price*, will show the greatest percent earned on the selling price of the stock.

The result of such analysis clearly shows which is the best single stock to purchase. If there are four or five which figure approximately the same, it is best for an investor to divide his money among them all.

It should be remembered that when ascertaining the cost of production, three factors must be considered:—

1. The pounds of copper per ton of rock crushed.
2. The cost of supplies, labor, etc., including taxes and all fixed charges.
3. The money spent on development, machinery, etc.

The first factor is the most important for *comparison purposes*, and varies not only as between different mines, but also in the same mine as be-

tween different levels and deposits of ore. Latest figures can be obtained from any broker.

The second factor is more or less constant with each mine; but the third factor is very different with different mines. This third factor is important, but it is difficult to obtain satisfactory information excepting for the more conservative properties.

After obtaining this data, the secret of successful investing depends simply upon purchasing these stocks when fundamental statistics show general business to be in a *period of depression* and keeping these stocks for a few years, until such time as such statistics show the country to be in a period of great prosperity when the stocks should be sold, although at this time probably the majority of investors are just beginning to purchase stocks. When the stocks have been sold, the money should be deposited in some safe bank or invested in high grade short term bonds, until the price of the metal falls and the country experiences another period of depression. These same or other standard stocks are then again purchased, and in a few years the investor again sells at a huge profit. There is little risk in such a method if only the most conservative stocks are bought, and there is no reason why any man cannot turn an original investment of about \$5,000 into \$200,000 within about twenty years, provided he is willing to spend a reasonable amount of time or money each year on collecting and tabulating fundamental statistics.

The theory advanced in this chapter is based on the

two assumptions that the mines will not become exhausted, and that no unforeseen event will make the working of these mines unprofitable. We refer to the physical arrangement of the mines, to the discovery of much richer and greater mines in other countries, and to the development of some other substance which will supersede copper in the industrial world.

Neither of these assumptions need be considered when investing in conservative railroad or industrial stocks, as railroads will always be of value both for their tangible assets and for their earning capacity. Therefore, for an investment this author personally believes that "railroads" and industrials are much preferable to "coppers." Still the latter are often very profitable for speculative purposes; and many, unlike the author, prefer such copper stocks to railroad stocks, owing to their freedom from the effects of undesirable legislation and certain other unfavorable factors.

The author wishes to emphasize, however, the importance of purchasing a large number of stocks rather than to invest in stocks of one or two companies, and this especially applies to mines for the reasons above stated. It is best not to try to compare any one copper stock with another except in a broad way. The man who takes the position that he knows nothing definitely about any of them, and purchases a sufficient number of stocks to be interested in the industry as a whole is the one who is in the strongest position. *If one purchases enough different copper stocks so as to have an interest in the*

companies which control about two-thirds of the output, and buys these stocks when the average copper stock market is at a low level, he should receive a handsome profit on the investment when the industry revives. Whatever may happen to one individual stock, the average profit should be very substantial. One, however, should not buy "prospects" which are little known, but should select a group of coppers which are paying dividends, or about to pay dividends.

In this connection it is argued by many that the uncertainty in regard to ore reserves does not apply to the "porphyries." The ore in these mines being regularly distributed through the soil, it is possible to block out a very large known tonnage in advance of extraction. For many years it has been known that land in certain parts of this country contained a small percentage of copper, but not until a few years ago have chemists perfected a process by which the copper could be extracted. These companies now have large known supplies blocked out, and because of this they are considered especially attractive by many investors.

PRODUCTION AND PROFITS OF

Name of Company	Shares Issued	Par Value	Dividends Paid in 1917
Ahmeek.....	200,000	\$25.00	\$2,800,000
Allouez.....	100,000	25.00	1,050,000
Anaconda.....	2,331,250	50.00	19,815,000
Calumet & Arizona.....	642,480	10.00	7,067,421
Calumet & Hecla.....	100,000	25.00	8,500,000
Cerro de Pasco.....	898,232	Nom.	4,009,471
Chile Copper.....	3,800,000	25.00	None
Chino.....	869,980	5.00	8,612,802
Copper Range.....	394,166	25.00	3,943,913
East Butte.....	420,000	10.00	420,000
Granby.....	149,952	100.00	1,349,961
Greene-Cananea.....	494,277	100.00	3,954,215
Inspiration.....	1,181,967	20.00	9,751,227
Isle Royale.....	150,000	25.00	600,000
Kennecott.....	2,786,986	Nom.	10,311,665
Magma.....	240,000	5.00	504,000
Mass. Consolidated.....	96,000	25.00	291,951
Miami.....	747,114	5.00	6,537,248
Mohawk.....	100,000	25.00	2,050,000
Nevada Consolidated....	1,999,457	5.00	8,297,747
North Butte.....	430,000	15.00	1,075,000
Old Dominion.....	297,071	25.00	2,376,262
Osceola.....	96,150	25.00	1,346,100
Quincy.....	110,000	25.00	1,980,000
Ray.....	1,577,179	10.00	6,624,152
Shannon.....	300,000	10.00	525,000
Shattuck Arizona.....	350,000	10.00	787,500
Utah Consolidated.....	300,000	5.00	1,050,000
Utah Copper.....	1,624,490	10.00	23,555,105
Wolverine.....	60,000	25.00	780,000

LEADING COPPERS FOR 1917

Total Div. to Date	Annual Dividend Rate on Basis Last Quarter	Price 1917 High Low	Production 1917 Pounds Cop.	Actual Earning per Share
\$9,650,000	\$ 8.00	108 70	27,919,000	\$16.94
2,150,000	6.00	70 45	8,892,000	10.85
137,706,875	8.00	87 51½	239,014,000	17.04
35,992,000	8.00	85½ 73½	62,397,000	10.32
145,250,000	60.00	580 412	68,419,000	121.53
6,676,135	5.00	41 25	72,674,000	9.85
None	None	27½ 13	88,370,188	1.43
22,488,132	4.00	63½ 35½	79,636,235	11.27
23,052,671	6.00	68 39½	31,268,130	12.60
831,000	4.00	16 8½	20,013,900	2.43
8,225,220	10.00	92 66	41,878,568	34.82
11,747,165	8.00	47 34	27,369,218	5.05
18,299,278	8.00	66½ 38	80,566,982	9.38
1,500,000	2.00	36 20	13,480,921	8.16
25,631,948	2.00	50½ 26	86,534,200	4.14
1,224,000	2.00	59½ 31	10,148,632	4.45
486,585	None	15½ 5	3,984,616	2.76
16,233,031	4.00	42½ 25	43,863,699	6.63
8,625,000	8.00	98 56½	12,313,882	19.72
35,771,869	3.00	26½ 16	82,040,508	4.83
14,764,500	1.00	24½ 11½	14,493,452	1.49
13,523,622	4.00	67½ 33	32,365,795	4.11
16,410,275	8.00	95 53½	16,084,958	11.22
25,517,500	8.00	95 60	22,195,577	22.81
15,555,252	3.00	32½ 19½	88,582,649	6.60
1,425,000	None	10 5½	6,138,219	.08
5,862,500	1.00	29½ 15	11,935,317	4.13
11,325,000	2.00	21½ 9½	7,968,165	2.71
75,770,882	10.00	118½ 70½	195,837,111	18.46
9,900,000	6.00	53½ 31	5,856,889	17.10

TABLE SHOWING RANGE IN PRICE OF LAKE
COPPER SINCE 1860

Year	Av.	Highest Price	Month		Lowest Price	Month
1860	22	24.0	(Jan.)	to	19.7	(Dec.)
1861	22	27.0	(Dec.)	to	17.5	(July)
1862	21	32.8	(Nov.)	to	20.7	(May)
1863	33	38.7	(Dec.)	to	29.0	(July)
1864	47	55.0	(July)	to	39.0	(Jan.)
1865	39	50.5	(Jan.)	to	28.0	(July)
1866	34	42.0	(Jan.)	to	26.5	(Nov)
1867	25	29.2	(Jan.)	to	21.5	(Dec)
1868	23	24.5	(Dec.)	to	21.5	(Jan.)
1869	24	27.0	(Feb.)	to	21.5	(Dec.)
1870	21	23.3	(Nov.)	to	19.0	(Mar.)
1871	24	27.0	(Dec.)	to	21.2	(Apr.)
1872	35	44.0	(Apr.)	to	27.1	(Jan.)
1873	28	35.0	(Jan.)	to	21.0	(Nov.)
1874	22	25.0	(Jan.)	to	19.0	(Aug.)
1875	22	23.8	(Sept.)	to	21.5	(Jan.)
1876	21	23.2	(Jan.)	to	18.7	(Aug.)
1877	19	20.5	(Feb.)	to	17.5	(Dec.)
1878	16	17.6	(Jan.)	to	15.5	(Oct.)
1879	18	21.7	(Nov.)	to	15.5	(Jan.)
1880	21	25.0	(Jan.)	to	17.8	(June)
1881	18	20.3	(Dec.)	to	16.0	(July)
1882	19	20.3	(Jan.)	to	17.8	(Apr.)
1883	16	18.1	(Jan.)	to	14.8	(Nov.)
1884	13	15.0	(Dec.)	to	11.0	(Dec.)
1885	10	11.8	(Feb.)	to	9.8	(May)
1886	11	12.1	(Dec.)	to	10.0	(May)
1887	13	17.7	(Dec.)	to	9.9	(May)
1888	16	17.6	(Nov.)	to	15.8	(Jan.)
1889	13	17.5	(Jan.)	to	11.0	(Sept.)
1890	15	17.2	(July)	to	14.0	(Mar.)
1891	12	15.0	(Jan.)	to	10.2	(Dec.)
1892	11	12.3	(Dec.)	to	10.5	(Feb.)
1893	10	12.5	(Jan.)	to	9.6	(Aug.)
1894	9	10.2	(Jan.)	to	9.0	(June)
1895	10	12.2	(Aug.)	to	9.3	(Apr.)
1896	10	12.0	(June)	to	9.7	(Jan.)
1897	11	12.0	(Jan.)	to	10.7	(Nov.)
1898	12	13.2	(Dec.)	to	11.0	(Jan.)
1899	17	19.3	(Apr.)	to	13.2	(Jan.)
1900	16	17.2	(Apr.)	to	16.0	(Feb.)
1901	16	17.0	(Jan.)	to	13.0	(Dec.)
1902	12	13.5	(Feb.)	to	11.0	(Jan.)

Year	Av.	Highest Price	Month		Lowest Price	Month
1903	13	15.3	(Mar.)	to	12.0	(Dec.)
1904	13	15.3	(Nov.)	to	12.2	(Feb.)
1905	15	18.8	(Dec.)	to	15.0	(May)
1906	22	25.0	(Dec.)	to	17.8	(Sept.)
1907	20	26.2	(Mar.)	to	12.5	(Oct.)
1908	13	14.4	(Dec.)	to	12.7	(May)
1909	13	14.3	(Jan.)	to	12.8	(Mar.)
1910	13	13.8	(Jan.)	to	12.5	(July)
1911	12	14.3	(Dec.)	to	12.2	(May)
1912	16	17.8	(Sept.)	to	14.2	(Jan.)
1913	16	17.8	(Jan.)	to	14.5	(Dec.)
1914	14	15.5	(Feb.)	to	11.3	(Oct.)
1915	18	23.0	(Dec.)	to	13.0	(Jan.)
1916	28	35.0	(Dec.)	to	23.0	(Jan.)
1917	29	35.3	(Mar.)	to	23.5	(*)
1918	25	26.0	(*)	to	23.5	(*)
1919	19	23.5	(July)	to	14.8	(Mar.)

*Price fixed by Gov't.

TABLE SHOWING RANGE IN PRICES OF LEADING COPPER STOCKS SINCE 1889

The prices of the leading copper stocks since 1889 have ranged as follows:

1890 AVERAGE 56-87

Osceola ranged from 45 (Sept.) to 32 (Dec.);
Quincy 130 (Sept.) to 80 (Nov.).

1891 AVERAGE 55-76

Osceola ranged from 40 (June) to 26 (Nov.);
Quincy 85 (Feb.) to 112 (Aug.).

1892 AVERAGE 82-91

Osceola ranged from 24 (Jan.) to 38 (Nov.);
Quincy 140 (Dec.) to 145 (Dec.).

1893 AVERAGE 65-89

Osceola ranged from 36 (Jan.) to 25 (Aug.);
Quincy 143 (Jan.) to 105 (Aug.).

1894 AVERAGE 59-76

Osceola ranged from 28 (Apr.) to 19 (July);
Quincy 125 (Jan.) to 81 (July).

1895 AVERAGE 41-74

Osceola ranged from 42 (July) to 20 (Dec.);
Quincy 102 (Mch.) to 170 (July); Wolverine 10
(July) to 3 (Dec.).

1896 AVERAGE 43-58

Osceola ranged from 21 (July) to 32 (Nov.);
Quincy 134 (Feb.) to 104 (Aug.); Wolverine 9
(Jan.) to 10 (Nov.).

1897 AVERAGE 47-63

Osceola ranged from 28 (Apr.) to 42 (Sept.);
Quincy 129 (Jan.) to 104 (Mch.); Wolverine 9
(Apr.) to 19 (Sept.).

1898 AVERAGE 53-91

Osceola ranged from 38 (Mch.) to 87 (Dec.);
Quincy 105 (Mch.) to 150 (Dec.); Wolverine 18
(Mch.) to 38 (Dec.).

1899 AVERAGE 51-87

Mohawk ranged from 38 (Apr.) to 14 (Dec.);
Osceola 105 (Feb.) to 61 (Dec.); Quincy 190 (Jan.)
to 125 (Dec.); Utah Cons. 53 (Apr.) to 21 (Dec.);
Wolverine 50 (Jan.) to 35 (Dec.).

1900 AVERAGE 57-78

Amalgamated ranged from 83 (Jan.) to 100 (Nov.); Mohawk 12 (June) to 28 (Dec.); Osceola 58 (June) to 80 (Nov.); Quincy 132 (July) to 178 (Sept.); Utah Cons. 38 (Apr.) to 22 (June); Wolverine 36 (June) to 49 (Dec.).

1901 AVERAGE 57-99

Amalgamated ranged from 130 (June) to 61 (Dec.); Mohawk 22 (Jan.) to 56 (Sept.); Osceola 120 (Sept.) to 72 (Dec.); Quincy 180 (Apr.) to 125 (Dec.); Utah Cons. 38 (Nov.) to 19 (Dec.); Wolverine 74 (Sept.) to 44 (Dec.).

1902 AVERAGE 47-74

Amalgamated ranged from 79 (Feb.) to 53 (Nov.); Copper Range 44 (Mch.) to 65 (Oct.); Mohawk 27 (Jan.) to 49 (Sept.); Osceola 90 (Feb.) to 48 (Nov.); Quincy 147 (Feb.) to 100 (Nov.); Utah Cons. 27 (Feb.) to 19 (July); Wolverine 42 (Jan.) to 65 (Dec.).

1903 AVERAGE 42-71

Amalgamated ranged from 76 (Mch.) to 34 (Oct.); Copper Range 75 (Feb.) to 37 (July); Granby 53 (Apr.) to 36 (July); Mohawk 58 (Feb.) to 31 (July); Osceola 79 (Feb.) to 44 (July); Quincy 127 (Feb.) to 80 (Oct.); Utah Cons. 22 (Jan.) to 34 (May); Wolverine 75 (Mch.) to 54 (July).

1904 AVERAGE 46-81

Amalgamated ranged from 43 (Feb.) to 83 (Dec.); Copper Range 38 (Feb.) to 75 (Nov.);

Granby 25 (Mch.) to 58 (Nov.); Mohawk 34 (Feb.) to 58 (Nov.); Osceola 53 (Feb.) to 98 (Nov.); Quincy 80 (Feb.) to 125 (Nov.); Utah Cons. 30 (Jan.) to 47 (Nov.); Wolverine 68 (Jan.) to 110 (Nov.).

1905 AVERAGE 64-98

Amalgamated ranged from 70 (Jan.) to 112 (Dec.); Copper Range 64 (Jan.) to 85 (Dec.); Granby 50 (Jan.) to 105 (Dec.); North Butte 34 (Aug.) to 93 (Dec.); Mohawk 48 (May) to 65 (Dec.); Osceola 88 (Feb.) to 115 (Oct.); Quincy 95 (May) to 118 (Jan.); Utah Cons. 39 (Mch.) to 59 (Nov.); Wolverine 105 (Jan.) to 135 (Dec.).

1906 AVERAGE 73-127

Amalgamated ranged from 118 (Feb.) to 92 (July); Copper Range 87 (Jan.) to 67 (July); Granby 80 (July) to 152 (Oct.); North Butte 75 (Mch.) to 118 (Oct.); Calumet & Arizona 107 (July) to 185 (Dec.); Mohawk 55 (Mch.) to 85 (Dec.); Osceola 93 (Mch.) to 151 (Dec.); Quincy 114 (Jan.) to 80 (July); Utah Cons. 70 (Jan.) to 52 (June); Wolverine 131 (Jan.) to 190 (Dec.).

1907 AVERAGE 56-140

Amalgamated ranged from 122 (Jan.) to 42 (Oct.); Copper Range 105 (Jan.) to 44 (Oct.); Granby 152 (Feb.) to 60 (Oct.); North Butte 120 (Jan.) to 30 (Oct.); Calumet & Arizona 198 (Feb.) to 89 (Oct.); Mohawk 96 (Jan.) to 37 (Oct.); Osceola 181 (Feb.) to 71 (Oct.); Quincy 148 (Feb.) to 70 (Oct.); Utah Cons. 79 (Jan.) to 25 (Oct.); Wolverine 198 (Jan.) to 93 (Oct.).

1908 AVERAGE 66-100

Amalgamated ranged from 45 (Feb.) to 88 (Nov.); Copper Range 55 (Feb.) to 84 (Nov.); Granby 80 (Jan.) to 110 (July); North Butte 41 (Feb.) to 90 (Nov.); Calumet & Arizona 93 (Feb.) to 103 (Aug.); Mohawk 45 (Feb.) to 73 (Nov.); Osceola 77 (Feb.) to 135 (Dec.); Quincy 77 (Feb.) to 100 (Aug.); Utah Cons. 29 (Jan.) to 50 (Aug.); Wolverine 115 (Jan.) to 155 (Nov.).

1909 AVERAGE 80-105

Amalgamated ranged from 65 (Feb.) to 96 (Nov.); Copper Range 68 (Feb.) to 87 (Nov.); Granby 110 (Jan.) to 90 (Feb.); North Butte 85 (Jan.) to 47 (Dec.); Calumet & Arizona 119 (Jan.) to 96 (May); Mohawk 70 (Jan.) to 57 (July); Osceola 122 (Feb.) to 170 (Dec.); Quincy 99 (Jan.) to 83 (Dec.); Utah Cons. 37 (Feb.) to 50 (Nov.); Wolverine 139 (Mch.) to 158 (Aug.).

1910 AVERAGE 53-97

Amalgamated ranged from 90 (Jan.) to 55 (July); Copper Range 85 (Jan.) to 58 (Feb.); Granby 111 (Jan.) to 20 (July); North Butte 50 (Jan.) to 18 (June); Calumet & Arizona 103 (Jan.) to 45 (July); Mohawk 75 (Jan.) to 43 (July); Osceola 166 (Jan.) to 114 (July); Quincy 92 (Mch.) to 66 (July); Utah Cons. 46 (Jan.) to 12 (Dec.); Wolverine 150 (Jan.) to 102 (July).

1911 AVERAGE 44-69

Amalgamated ranged from 72 (June) to 45 (Sept.); Copper Range 70 (Feb.) to 47 (Sept.); Granby 44 (June) to 26 (Aug.); North Butte 36

(June) to 20 (Sept.); Calumet & Arizona 45 (Sept.) to 64 (Dec.); Mohawk 36 (Apr.) to 57 (Dec.); Osceola 124 (Jan.) to 81 (Sept.); Quincy 55 (Sept.) to 76 (Dec.); Utah Cons. 10 (Jan.) to 20 (June); Wolverine 122 (Feb.) to 74 (Nov.).

1912 AVERAGE 52-79

Amalgamated ranged from 60 (Feb.) to 92 (Oct.); Copper Range 66 (Apr.) to 48 (Dec.); Granby 33 (Feb.) to 77 (Nov.); North Butte 22 (Feb.) to 39 (Oct.); Calumet & Arizona 57 (Feb.) to 83 (Aug.); Mohawk 50 (Jan.) to 73 (June); Osceola 130 (June) to 100 (Dec.); Quincy 95 (June) to 72 (Dec.); Utah Cons. 20 (Apr.) to 9 (July); Wolverine 117 (Apr.) to 65 (Dec.).

1913 AVERAGE 43-66

Amalgamated ranged from 81 (Jan.) to 62 (June); Copper Range 53 (Jan.) to 32 (Dec.); Granby 51 (June) to 78 (Sept.); North Butte 35 (Jan.) to 22 (June); Calumet & Arizona 73 (Jan.) to 57 (June); Mohawk 65 (Jan.) to 38 (Nov.); Osceola 107 (Jan.) to 67 (Dec.); Quincy 80 (Jan.) to 52 (Dec.); Utah Cons. 11 (Jan.) to 7 (May); Wolverine 76 (Jan.) to 39 (Nov.).

1914 AVERAGE 42-56

Amalgamated ranged from 78 (Feb.) to 49 (Dec.); Copper Range 41 (Feb.) to 29 (Dec.); Granby 91 (Feb.) to 60 (Dec.); No. Butte 31 (Feb.) to 20 (Dec.); Calumet & Arizona 70 (March) to 53 (Dec.); Mohawk 39 (Apr.) to 50 (Dec.); Osceola 84 (Feb.) to 64 (Dec.); Quincy 68 (Feb.) to 52 (Dec.); Utah Cons. 9 (Jan.) to 14 (Feb.); Wolverine 48 (Feb.) to 30 (Dec.).

1915 AVERAGE 39-74

Anaconda ranged from 25 (Feb.) to 92* (Nov.); Copper Range 30 (Jan.) to 65 (Dec.); Granby 58 (Jan.) to 94 (Apr.); No. Butte 22 (Jan.) to 38 (Apr.); Calumet & Arizona 51 (Feb.) to 79 (Apr.); Mohawk 46 (Jan.) to 98 (Dec.); Osceola 64 (Jan. & Feb.) to 93 (Apr.); Quincy 50 (Jan.) to 95 (Apr.); Utah Cons. 9 (Feb. & Meh.) to 16 (June); Wolverine 32 (Jan.) to 70 (Apr.).

1916 AVERAGE 59-86

Anaconda ranged from 77 (July) to 101 (Sept.); Copper Range 55 (July) to 87 (Nov.); Granby 79 (July) to 120 (Nov.); No. Butte 20 (July) to 32 (Nov.); Calumet & Arizona 66 (July) to 101 (Nov.); Mohawk 77 (July) to 108 (Nov.); Osceola 79 (Aug.) to 105 (Nov.); Quincy 81 (July) to 109 (Nov.); Utah Cons. 12 (July) to 30 (Nov.); Wolverine 67 (Feb.) to 45 (Oct.).

1917 AVERAGE 35-72

Anaconda ranged from $51\frac{1}{8}$ (Nov.) to 87 (May); Copper Range $39\frac{1}{4}$ (Dec.) to 68 (Jan.); Granby 65 (Nov.) to $92\frac{3}{8}$ (Jan.); No. Butte $11\frac{3}{4}$ (Oct.) to $24\frac{1}{2}$ (Mar.); Calumet & Arizona $55\frac{1}{2}$ (Dec.) to $84\frac{1}{2}$ (May); Mohawk $56\frac{1}{2}$ (Nov.) to 98 (Jan.); Osceola $53\frac{1}{2}$ (Dec.) to 95 (Mar.); Quincy 60 (Nov.) to 95 (Feb.); Utah Cons. $9\frac{1}{2}$ (Dec.) to $21\frac{1}{2}$ (Feb.); Wolverine 31 (Dec.) to $53\frac{1}{2}$ (Mar.).

*Par value of Anaconda increased from \$25 to \$50 May 19.

1918 AVERAGE 49-64

Anaconda ranged from 59 (Dec.) to 74 (Oct.); Copper Range 40 (Dec.) to $51\frac{1}{2}$ (Nov.); Granby 74 (Jan.) to 86 (Oct.); No. Butte $10\frac{1}{2}$ (Dec.) to $17\frac{3}{4}$ (May); Calumet & Arizona 61 (Dec.) to $73\frac{1}{2}$ (May); Mohawk $50\frac{1}{2}$ (Dec.) to $66\frac{1}{2}$ (May); Osceola $46\frac{1}{2}$ (June) to 65 (Jan.); Quincy 59 (Dec.) to 78 (May); Utah Cons. 7 (Dec.) to 12 (Jan.); Wolverine 18 (Dec.) to 36 (Jan.).

1919 AVERAGE 38-61

Anaconda ranged from 55 (Nov.) to 78 (July); Copper Range 39 (Mar.) to 62 (July); Granby 48 (Dec.) to 80 (Jan.); No. Butte 9 (Feb.) to 20 (July); Calumet and Arizona 57 (Mar.) to 86 (July); Mohawk 50 (Feb.) to 83 (July); Osceola 45 (Mar.) to 73 (July); Quincy 52 (Mar.) to 83 (July); Utah Cons. 7 (Dec.) to 13 (July); Wolverine 15 (Mar.) to 31 (July).

FINAL WORD TO READERS

It occurs to the author that this book may possibly be the means of causing some persons who will not give the proper study to statistics and general conditions, to invest in stocks. I therefore advise every reader that, if he is unwilling to invest about one hundred dollars a year in collecting and tabulating the necessary statistical data, it is better to buy no stocks whatsoever, but to confine all investments strictly to high grade bonds such as are recommended by conservative bond dealers.

One other thing,—whether buying stocks or bonds, the investor should not be in a hurry to make money too fast. The principal invested should grow slowly and naturally. One should be willing to creep before walking and be willing to walk before running, remembering that there are many years in which to accomplish the desired object and that success depends very largely upon progressing slowly and carefully, especially during the first few years.

Success comes not by *forecasting*, but rather by *doing* the right thing at the right time and always being willing to change one's course. For this reason much more money is made by directing one's business and investments with a purpose of *preventing* panics than by trying to *forecast* panics and then pursuing a policy based upon the belief that said forecast must prove true. With this object in view, I offer the services of my large organization that merchants, bankers and investors may always be best prepared for whatever the future is most likely to bring forth.

ROGER W. BABSON.

APPENDIX

THE EFFECT OF WAR ON THE BUSINESS CYCLE

The first effect of the outbreak of war is to set up a violent disturbance. This affects the securities markets in two ways. First the rupture of commercial relations between the belligerent powers causes those individuals who hold obligations of enemy nation or nations, or citizens thereof to try to market those securities in a hurry, thus depressing their prices. Loans involved in international transactions are hastily called and money tightens. Neutral holders of securities of belligerents join in the effort to sell them, and a general decline is precipitated.

Such action on the part of securities markets is usually the forerunner of a period of business depression. Trade routes are disorganized; the demand is cut off for certain lines of goods that formerly were exported to enemy countries, or countries cut off by blockades.

But the recovery from this war depression is usually rapid. It is most rapid in the case of neutrals who are in a position to sell to the belligerents without themselves suffering the expense, taxes, and labor disturbances incident to war. A new and vigorous demand springs up for war materials of all kinds, thus supplying the impetus which starts in motion a prosperity movement as described in Chapter IV (see page 115.)

This revival of demand and speeding up of business is accompanied by a monetary inflation which

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serves to finance the new buying, and in turn acts as a stimulating cause, acting to extend the rise in the price of war materials to all other lines.

This inflation will come in the case of a belligerent country thru emissions of paper money, extensions of bank credit and the flotation of government bonds, which serve as collateral for further expansion of credit. In the case of neutrals the inflation will be less marked and will come about thru the inflow of specie in payment for purchases.

The next stage in the case of belligerents is a period of readjustment. Producing power — labor and capital — is diverted from old channels to the production of war material on a large scale. Labor supply becomes the limiting factor in industry. The cost of living rises and government intervention has in every belligerent country stopped the free play of purely economic forces.

The success of price fixing, priority rules, regulations regarding distribution and consumption, depend partly on the extent to which the ultimate demand can be controlled, but by far the most important factor in control of these economic conditions is the extent to which the public responds to the patriotic appeal, and supports the government's regulations. Non-economic values, such as public opinion, fear of losing good will and public esteem, must be brought into play to give effect to the government's rules regarding prices and the consumption of foods, etc.

The net result is that the whole economic life becomes readjusted to a war basis. Generally speak-

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ing, this readjustment is unfavorable to the business enterpriser who finds his profits limited and taxed to a point where his ardor is greatly cooled. Expected large profits are not realized, the peak of the boom is passed and the country is entering on a period of depression.

While the war lasts this period will develop rather slowly, since the demand and employment will be certain in those lines in which the readjustment has left it.

With the end of the war a pronounced disturbance is inevitable. The established demand for war goods suddenly collapses. On the other hand, new lines of trade open up and a supply of labor is released. Monetary conditions ease and there is likely to be a brief reconstruction boom. This will be followed by a period of reaction in which the destruction of men and property will show its full effect. The financial and social difficulties which a great bonded debt creates, together with falling prices and labor troubles, all combine to produce on a nation much the same effect as that of the days following a debauch on the part of the individual.

Thus war does not act to defeat in any way the application of the law of equal reaction to business conditions, but rather speeds up the process and intensifies both the action and reaction.

"No sir, ye can bet it ain't th' people that have no money that causes panics. Panics are th' result in too manny people havin' money. Th' top in good times is hard times an' th' bottom in hard times is good times. Whin I see wan man with a shovel on his shouldher dodgin' eight thousand autymobills I begin to think 'tis time to put me money in me boot.

"Don't git excited about it, Hinnessy, me boy. Cher up. 'Twill be all right tomorrow, or th' next day, or sometime. 'Tis wan good thing about this here wurruld, that nawthan lasts long enough to hurt. I have been through manny a panic. I cud handle wan as well as Morgan. Panics cause thimsilves an' take care of thimsilves."

—Dooley.

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BABSON'S REPORTS

ON

"Fundamental Conditions"

A Special Service to furnish Merchants, Manufacturers, Investors and Bankers up-to-date information on the subjects mentioned in this book.

(To avoid any misunderstanding we desire to state that this work did not originate with us, but was inaugurated years ago by some of the leading banking and mercantile firms of this country. The expense incurred through performing the work independently was so great that the smaller houses hesitated to assume the burden individually. We therefore took up the work in the common interest of all concerned, dividing the cost among the firms and individuals who subscribe and share the resulting advantages.)

A. Statistical Sheet of Figures

In order that the client may have all the figures with which this organization works and upon which its conclusions are based, we supply monthly figures on the principal subjects which are representative of the entire country, such as Bank Clearings, Railroad Earnings, Exports, Imports, Gold Production, New Building, Immigration, etc. These subjects are divided into twelve main divisions according to whether they pertain especially to Mercantile and Manufacturing Conditions, to Banking and Monetary Conditions, or to Investment and other Conditions. It should be especially noted that each issue of this Statistical Sheet contains not only the latest figures, but previous figures as well, thus obviating the necessity of posting, filing,

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or any clerical work whatever. The old sheet is simply destroyed upon receipt of the new.

The Statistical Sheet is the foundation of our service and contains impartial, reliable and up-to-date figures on the subjects discussed at length in this book as the chief barometers of business. In order that the trend of these figures may at any time be detected at a glance, we have added graphic plots of them in red ink. It is believed that this combination of statistics and charts laid before the client each month is of the utmost value, presenting, as it does, every factor in the current fundamental situation.

B. Weekly Barometer Letter and Compositplot

The Weekly Barometer Letter and Babson Compositplot is issued every Tuesday, and summarize in a nutshell the general situation actually existing in the Mercantile, Monetary and Investment worlds, as shown by the change in the figures on the Statistical Sheet.

The Barometer Letter is in no way designed to replace original thought on the part of clients, and should not be regarded as a "market letter" in any sense. It is more in the nature of an engineering report, prepared solely in the interests of the client and affords him a helpful check and

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comparison when determining what course of action and policy is most profitable. In connection with the Barometer Letter, a summary index figure is also given which is a composite of the figures on the Statistical Sheet, showing the changes in general business from week to week and month to month.

The Compositplot shows graphically the trend of this index figure during the past fifteen years, brought up to date each week. It gives a bird's-eye summary of the past, an exact record of the present, and the clearest possible indication of the future of business in the United States. By watching from month to month the movements of the Compositplot, one can see at a glance the trend of general business, and also the tendency of commodity prices and security prices. The close relation which these latter subjects bear to general business conditions is clearly indicated by the Compositplot inserted in Chapter IV.

It is not enough, however, to watch conditions in this country alone, for business throughout the world has now become so closely related that prosperity or depression in any of the principal countries has a great effect on business conditions in the United States. In order that our clients may easily watch these foreign factors, Babson Compositplots for foreign countries are submitted to clients from time to time, showing in graphic form the current trend of business conditions in the leading countries of the world. With these data before him, the merchant or manufacturer can

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at once detect any changes which are taking place in the affairs of all the leading countries, thus obtaining a broad view of business conditions.

Our clientele may be generally divided into the following four groups:

1. Merchants, manufacturers, and others engaged in industrial, commercial, and mercantile lines, including corporation directors.
2. Individual investors, trustees, treasurers of endowed institutions, insurance companies, and other enterprises—apart from banks—in which investment has a leading part.
3. Bankers and directors of banks.
4. Those interested in the work in general; statistical departments, universities, economists.

As previously mentioned, the features A and B deal with general business conditions and are common to all our services, since it is absolutely necessary for every one, whether he be merchant, banker, or investor, to form his policies in accordance with fundamental conditions. In order to help our clients more specifically, however, we have provided the following additional portions of our service, which take up various phases of the question in detail.

1. Semi-Monthly Speculative Bulletin

The Statistical Sheet and Weekly Barometer Letter and Compositplot give the client the basis for

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determining when to buy and when to sell securities in order to take advantage of the long swings of the stock market. Equally important with the knowledge of *when* to buy and *when* to sell, however, is the knowledge of *what* to buy and *what* to sell, and to make the service complete, the semi-monthly Speculative Bulletin takes up this phase of the science of investment. Furthermore, while the Barometer Letter treats only of the long swings of the market, extending over a year or more, in a general way, the Speculative Bulletin goes into more detail. Each issue contains a review of the general situation and an analysis of one or more specific securities. Although we believe the ideal plan and policy to be that outlined at length in the pages of this book, we recognize the fact that all investors do not have the patience to wait for panics and panic prices, but desire to buy some securities more frequently. Such investors are especially interested in the work of our corps of engineers, which is constantly studying factors which determine the value of these individual securities.

In order to be of greater help to investing clients, we have established an inquiry department which will answer any reasonable questions in regard to the individual securities in which they are interested. Neither the Speculative Bulletin nor the Inquiry Service, however, will help the day to day trader, for *nobody can tell what a particular security will do in a day or a week*, but when used in connection with the rest of the service, this department fills the needs of the conservative

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purchaser who desires all the profit that is consistent with safety.

The real value of this Service, however, is found in the fact that it is prepared solely and exclusively from the standpoint of the client. We neither buy nor sell securities, in any way, shape, or manner, nor have we any connections whatsoever, direct or indirect, which influence our judgment. Clients thus secure for themselves strictly professional work of the highest character, which if paid for individually would be beyond the means of any but the most wealthy.

2. Semi-Monthly Investment Bulletin

The natural desire of all is to invest with a minimum of risk, at the same time receiving as high an income as possible. There is no such thing as permanent absolute safety. The conditions underlying investments may be absolutely clear at the time of purchase, but financial conditions shift constantly. An example may be found in the conditions that have developed among our street railways in the past four years. These securities were prime investments five to seven years ago.

It is naturally impossible for any investor to maintain sources of information that are sufficient to keep him thoroughly acquainted with changing conditions. This, however, is our business.

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In order to do this we cover the entire investment field from the standpoint of the man who has capital ready to invest to that of the man whose capital is all tied up in investments. On the first and second pages of the Bulletin, for example, the present and prospective future conditions of the investment market are discussed, and all instances where investment securities are selling above or below their true value are pointed out. On subscription clients submit to us a list of their investment holdings. With this as a basis we recommend exchanges. Securities, underlying conditions of which are showing an adverse tendency, are discussed adversely and switches recommended into securities giving at least as good a return with a higher degree of security.

The third page is entirely devoted to an analysis of what we believe to be the most attractive investment of the entire mass, as sifted out by our experts. Page four is devoted to a list of carefully selected short time securities and current commercial paper offerings such as form a substantial basis for short term investments for individuals or corporations of any description. The Bulletin also gives a comprehensive study of the money market.

From the above it can be seen that it is our purpose to discuss the investment field from all angles, from the standpoint of the most discriminating bankers and trustees, as well as the standpoint of business men desiring a maximum yield.

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3. Semi-Monthly Commodity Bulletin

A most essential factor is the price of various commodities and their relation to the general business situation. The Commodity Bulletin supplies this information twice a month and covers all the leading commodities completely and specifically, showing the present condition and price trend of each, and stating when to buy and when to refrain from buying. From the very nature of the work, the Commodity Bulletin must be specific, and is **invaluable to every buyer no matter how large or small the quantity purchased.** The application and connection of these commodity forecasts to specific localities and industries is explained below.

4. Semi-Monthly Compositplot with "Advice to Sellers" Bulletin.

Sales, advertising and credit departments use the Babson Compositmap in two ways: First, To obtain a quota, gauge, or check upon their sales, advertising returns, or collections. Second, To discover localities which are due for a period of exceptional prosperity. Such localities will yield maximum sales at minimum selling expense; advertising will bring greater returns; and credit can be extended with added safety. On the other hand, information is given of localities with relatively unfavorable outlook, where sales will be slow and costly, advertising unprofitable, and credit risky.

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The Compositmap shows at a glance the status and trend of business throughout the United States. Districts colored yellow are doing more business than a year ago; districts colored blue are doing less business than a year ago; while districts colored green are doing about the same amount of business as a year ago. Cities denoted by a full circle are doing more business than a year ago; cities denoted by an empty circle are doing less business than a year ago. Besides these comparisons with a year ago, each district can be compared with the preceding month and with normal or average, by means of graphic charts surrounding the map and showing the trend of business monthly over a period of years.

Upon request we will send to subscribers a graphic chart for any city or state showing its fundamental purchasing power plotted monthly, over a period of years. Such charts can readily be kept posted to date from the monthly statistics published on the back of the Compositmap. In connection with the Compositmap there are published special maps devoted to crops, failures, building, automobile registrations and other factors. These maps are useful for permanent reference as well as current interest and should be filed in a Card Atlas,—fully explained upon request.

The Compositmap is accompanied by the "Advice to Sellers" Bulletin explaining, interpreting and forecasting the trend of business in districts and cities. For example, an upward trend in the price of cotton and other local products is the forerunner of business activity in the South. Similarly, a boom in the grain

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regions can be foreseen from a forecast of price advances in commodities such as wheat and corn. Favorable prospects for the automobile industry imply activity for such cities as Detroit. In other words, the prosperity of a locality depends upon the fluctuating trends of its basic commodities and industries. In the "Advice to Sellers" Bulletin, a knowledge of market conditions (see Section 3 above) and industrial conditions (see Section 6 above) is applied to forecasting the future of sales territories. General conditions and the outlook for business in approximately 120 leading cities are covered regularly. In addition cities and localities of special interest from a sales or credit standpoint are discussed at length. Clients are always kept posted—even in times of depression—regarding sections where sales can be made.

This division of Babson's Reports enables the manufacturer, merchant, and jobber to know the trend of business in any locality, giving him an exceptional guide as to whether he should lay particular stress in one direction or whether he would find it more profitable to place the effort in some other field. Briefly the Compositmap with "Advice to Sellers" Bulletin treats of localities, showing their purchasing power and the probable trend thereof, while the Industries Bulletin treats of the outlook for and conditions in specific industries.

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5. Semi-Monthly Labor and Co-operation Bulletin

As the employer is vitally interested in the future trend of the labor movement, Mr. Babson has a special staff which does nothing but investigate and study the labor and social conditions affecting our industries, namely—the differences that exist between employer and employee. In this bulletin we give absolutely impartial and unbiased reports on all important strikes and controversies between the employer and employee, show the cause of the trouble, and what the probable outcome will be. In this bulletin Mr. Babson also gives his personal opinion on practical methods calculated to lessen the friction between labor and capital. These bulletins help the employer to settle labor troubles by presenting in interesting, simple form the practical, concrete plans which have been successfully tried along profit sharing, vocational education, co-operative competition and similar lines. These unique Labor and Social Bulletins can be used by any individual, even though he may not be an employer of labor.

6. Semi-Monthly Industries Bulletin.

We have found by long experience that clients like to have our opinion as to just how the future trend of fundamental conditions may be expected to affect their own business or industry, and industries to which they contemplate selling or to

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which they are called upon from time to time to loan money. Hence we are issuing twice a month, a bulletin dealing with future conditions in each of the more important industries. The first and second pages of the Bulletin give in detail the outlook for a few specific industries, while the third and fourth pages contain "Babson's Industrial Outlook," in which we give briefly and concisely our opinion of the future of various industries. Every month we cover over one hundred different industries. The Industries Bulletin thus advises clients of the probable future industrial activity or inactivity of over 300,000 manufacturing establishments.

The Industries Bulletin is of value to manufacturers, sellers, bankers, credit men and advertisers. All who sell or extend credit to any industry will find this bulletin a valuable asset in shaping their decisions and activities.

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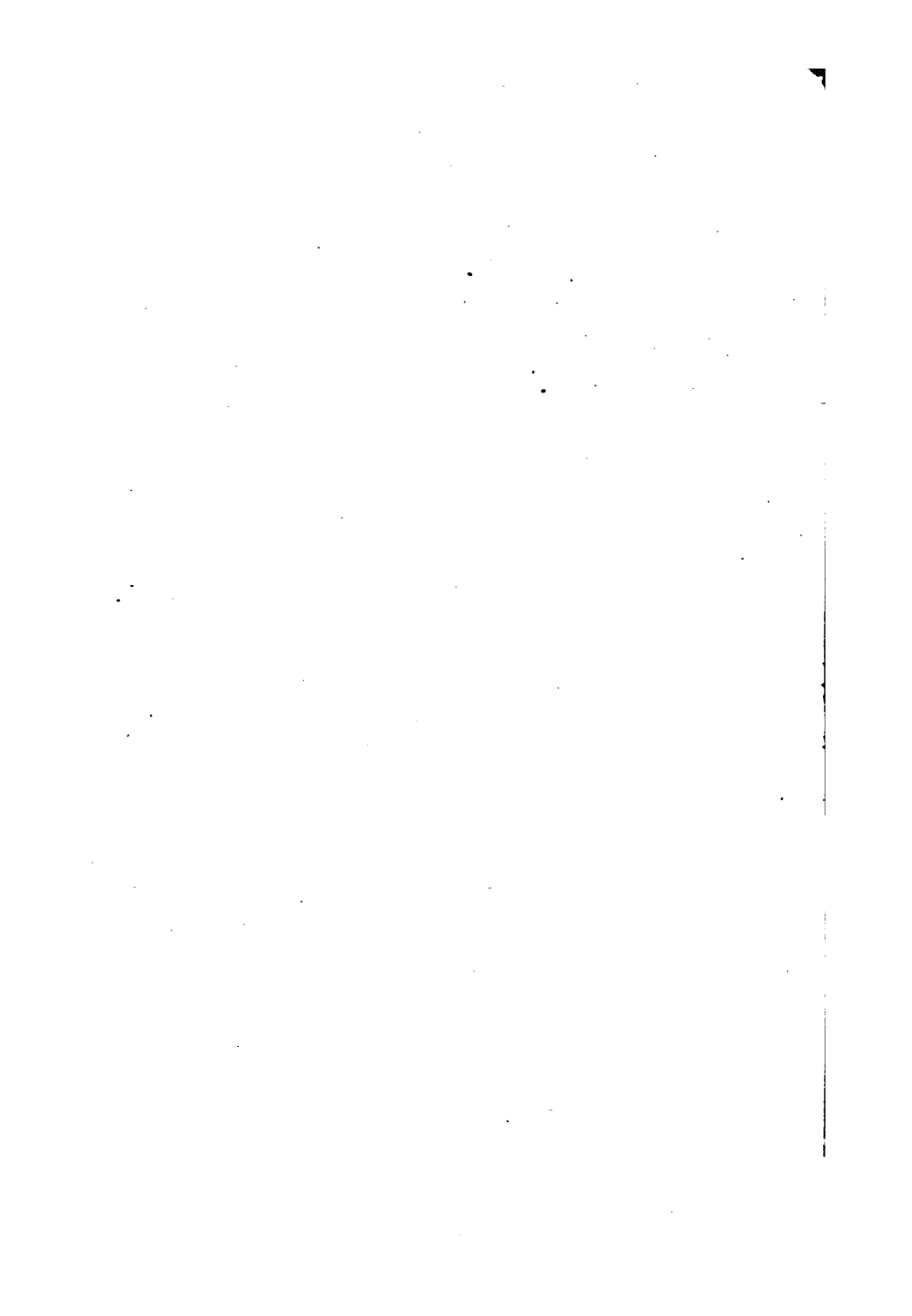
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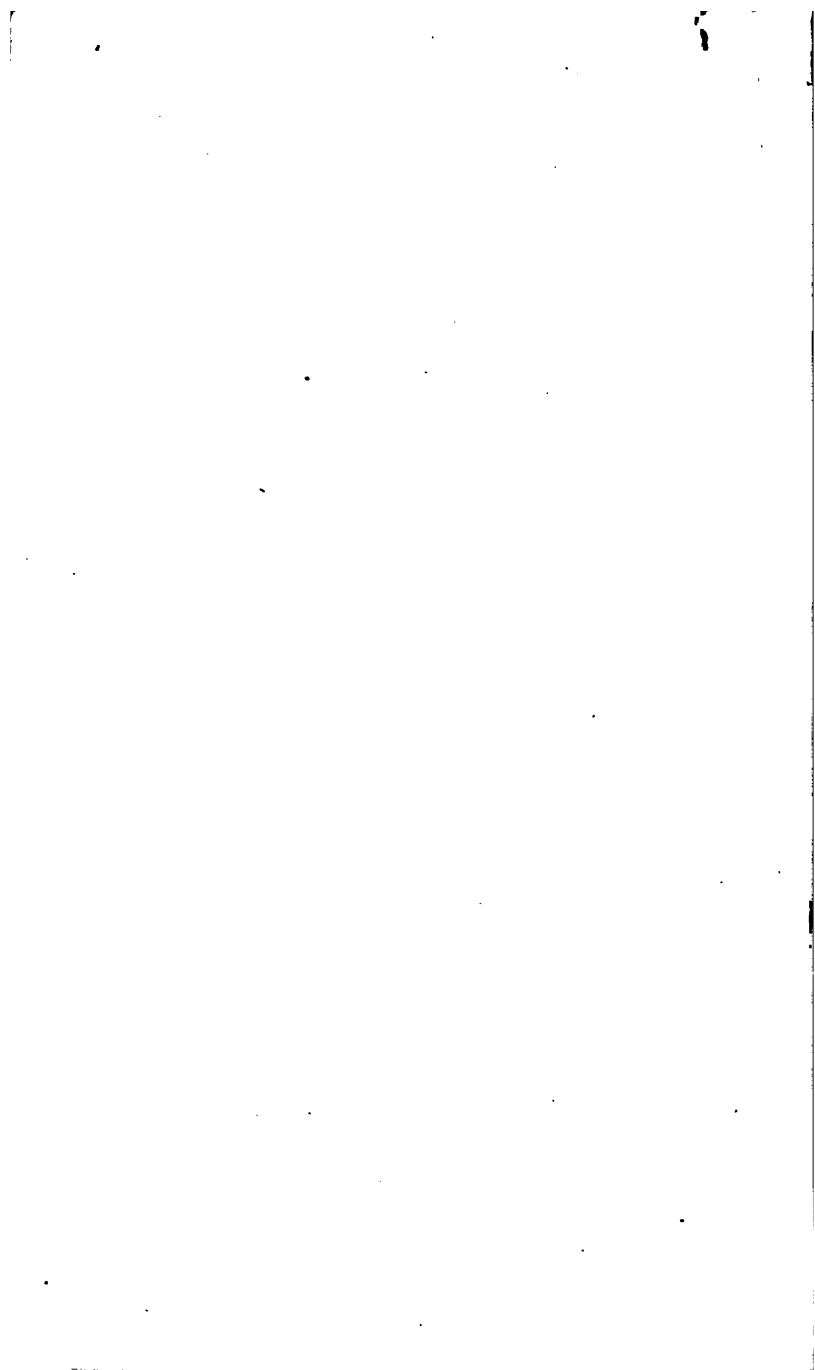
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